User's Manual

RichPOS-2000 with FIR-ULV600~1G-DVR main board, 8.4 & 14.1 inch LCD's

Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and shielded AC power cables must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Important Safety Information

SAFETY INSTRUCTIONS

1. Please read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Don't use liquid or spray detergent for cleaning. Use only a moistened sheet or cloth.
4. For pluggable equipment, the socket-outlet should be installed near the equipment and should be easily accessible.
5. Keep this equipment from extreme humidity areas.
6. Lay this equipment on a stable surface when installing.
7. Do not leave this equipment in a non-air conditioned environment, or in a storage temperature above 60° C. Such conditions may damage the equipment.
10. Place the power cord so that it will not be stepped on. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect the equipment from the mains to avoid damage.
14. Never open the equipment. For safety reasons, qualified service personnel should only open the equipment.
15. If one of the following situations arises, get the equipment checked by service personnel:
    a. The Power cord or plug is damaged.
    b. Liquid has penetrated the equipment.
    c. The equipment has been exposed to extreme moisture conditions.
    d. The equipment does not work well or you cannot get it work according to the user's manual.
    e. The Equipment has been dropped and damaged.
    f. The equipment has obvious signs of damage.

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Chapter 1

Introduction

RichPOS-2000 Characteristics

- **RichPOS-2000** uses a high speed processor capable of handling a high capacity of data efficiently.

- **RichPOS-2000** solid quality Aluminum housing distinguishes it from ordinary plastic housings.

- The **RichPOS-2000** touch terminal all-in-one is a robust, fanless design and is suitable for a multitude of business types.

- **RichPOS-2000** is very suitable for the retail market environment.

- The LCD panel can be tilted at multiple angles for operator ease of use.

- **RichPOS-2000** functionality extends far beyond the standard setup. **RichPOS-2000** can be adapted for a variety of uses with the addition of any of the following options: **Capture Card,** Magnetic Card Reader, VFD/LCD customer display and Cash drawer, Hard disk, Modem, LAN, Audio devices, Compact Flash, Camera, Biometric reader and a wide variety of USB devices (all available upon request).

- **RichPOS-2000** security is designed to prevent data theft. The **RichPOS-2000** system can be totally diskless or may be equipped with an internal **3.5”** HDD. Data Backup can be constrained to Backup Servers in a network environment, or to (optional) removable external Storage devices making it hard to copy data without authority.

- **RichPOS-2000** is a fanless solution, which utilizes the solid aluminum housing to dissipate any excess heat.

- Additionally the aluminum casing also assures compliance to vigorous EMI radiation testing.

How to Use This Manual

This manual contains all the information you need to set up and use **RichPOS-2000**. In addition, you can also consult the manuals for the operating system and any additional hardware manuals for peripherals that you may have added.

Chapter 1 Provides an introduction to **RichPOS-2000** and this manual.

Chapter 2 Provides all necessary information for all hardware setup.

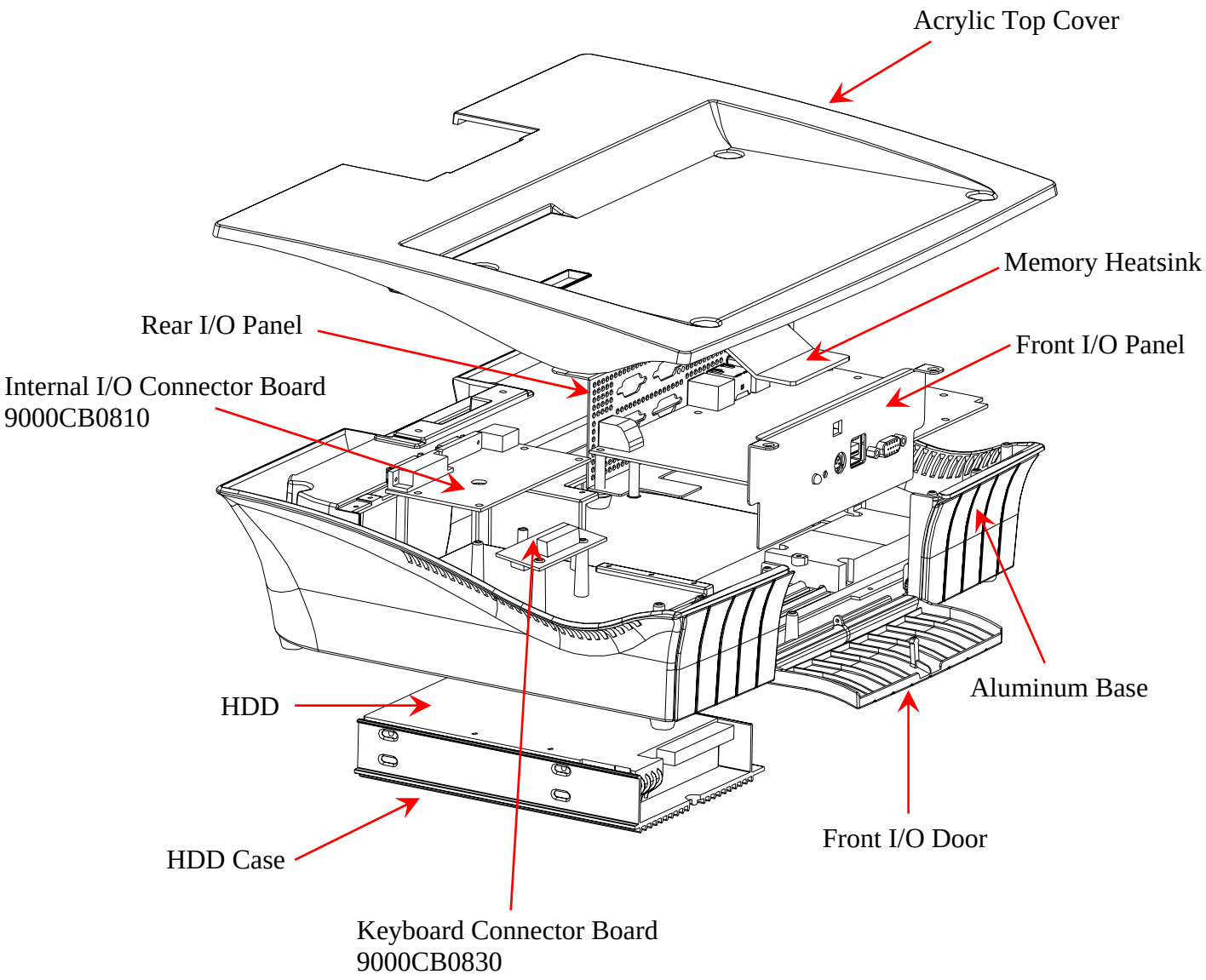
Chapter 3 Provides the necessary information for installing the video drivers, touch screen tools, audio, USB and LAN drivers.

Chapter 4 Lists all **RichPOS-2000** specifications and Information for the main board configuration.

Chapter 5 Provides information for troubleshooting the **RichPOS-2000**.

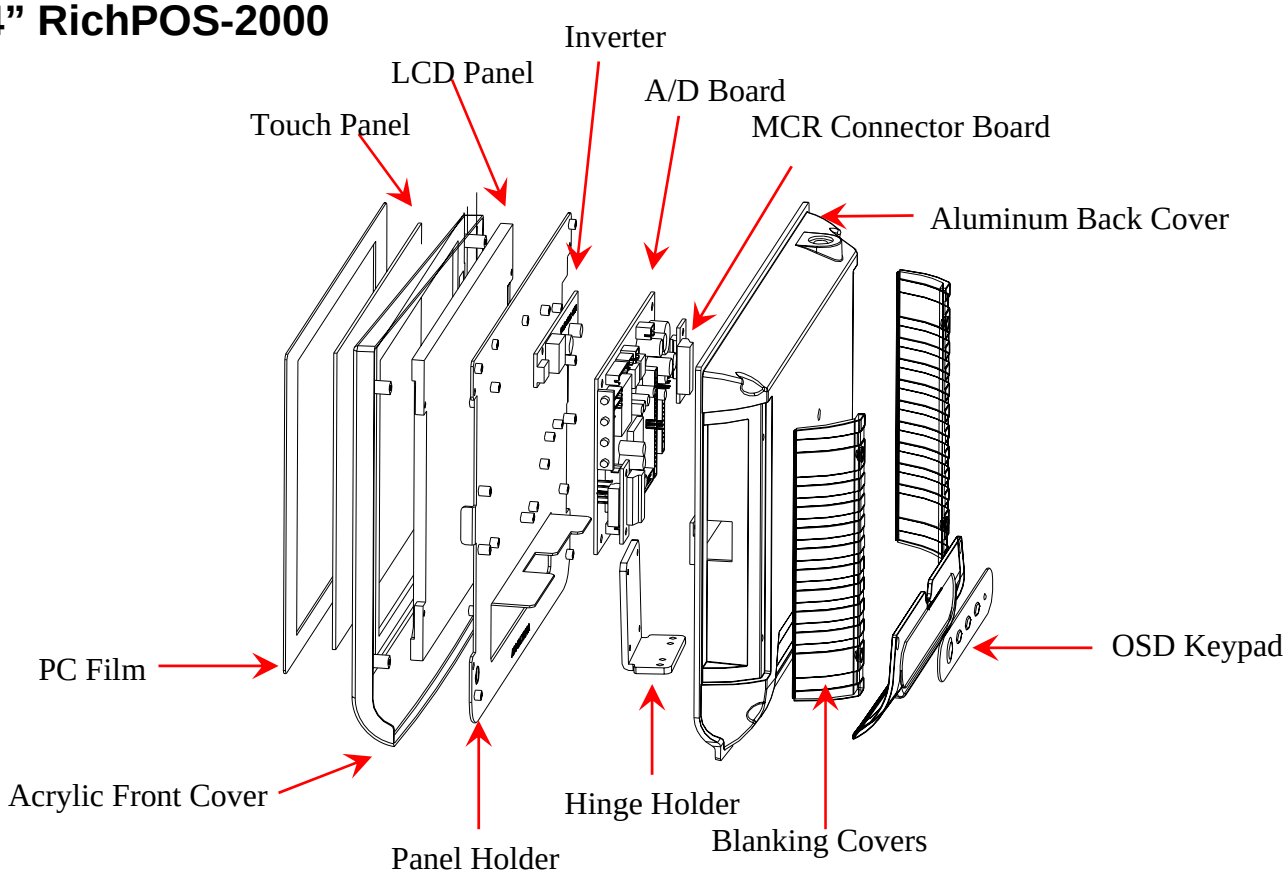
A Visual Tour of RichPOS-2000

Before you start, take a few moments to become familiar with **RichPOS-2000**.

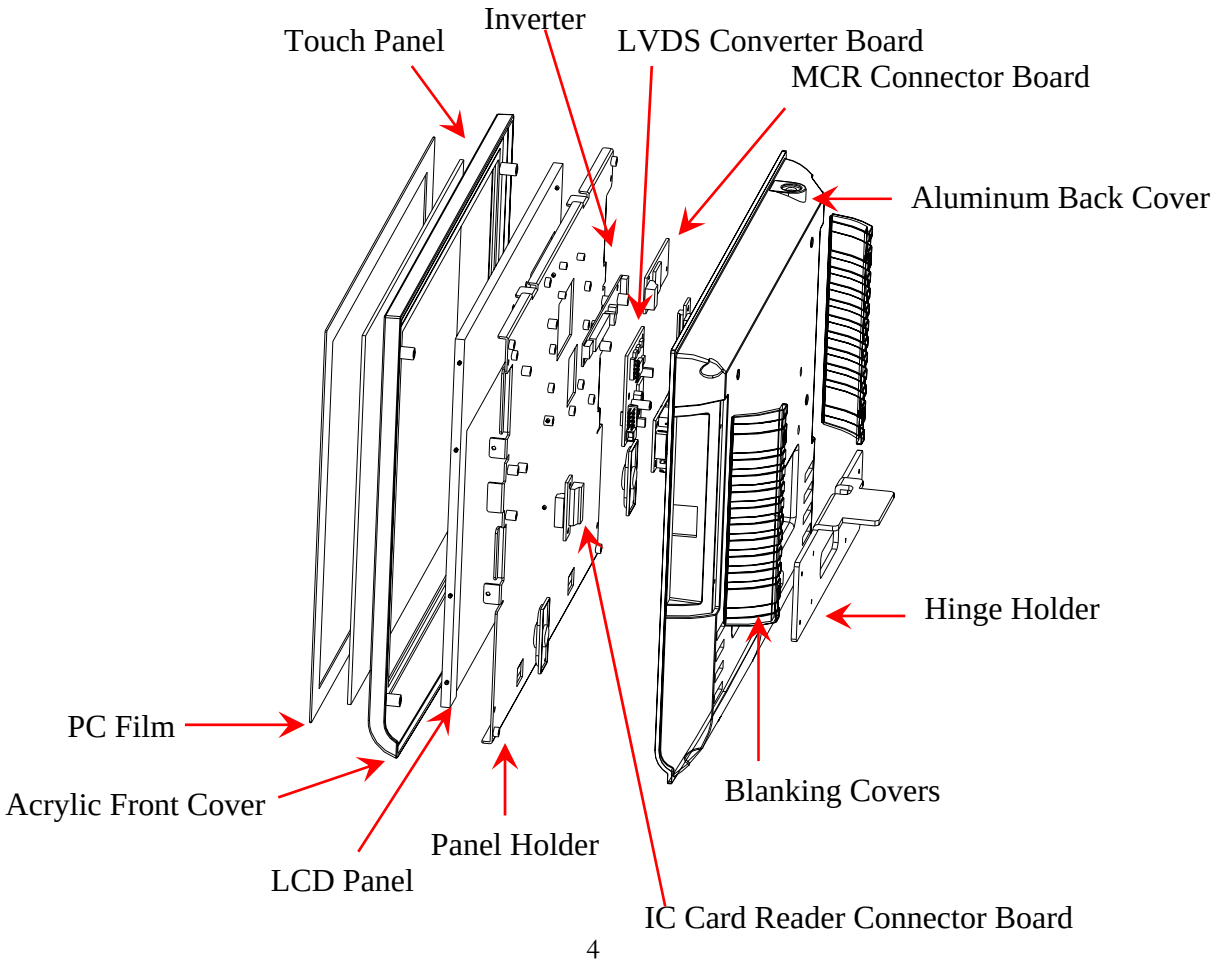


RichPOS-2000

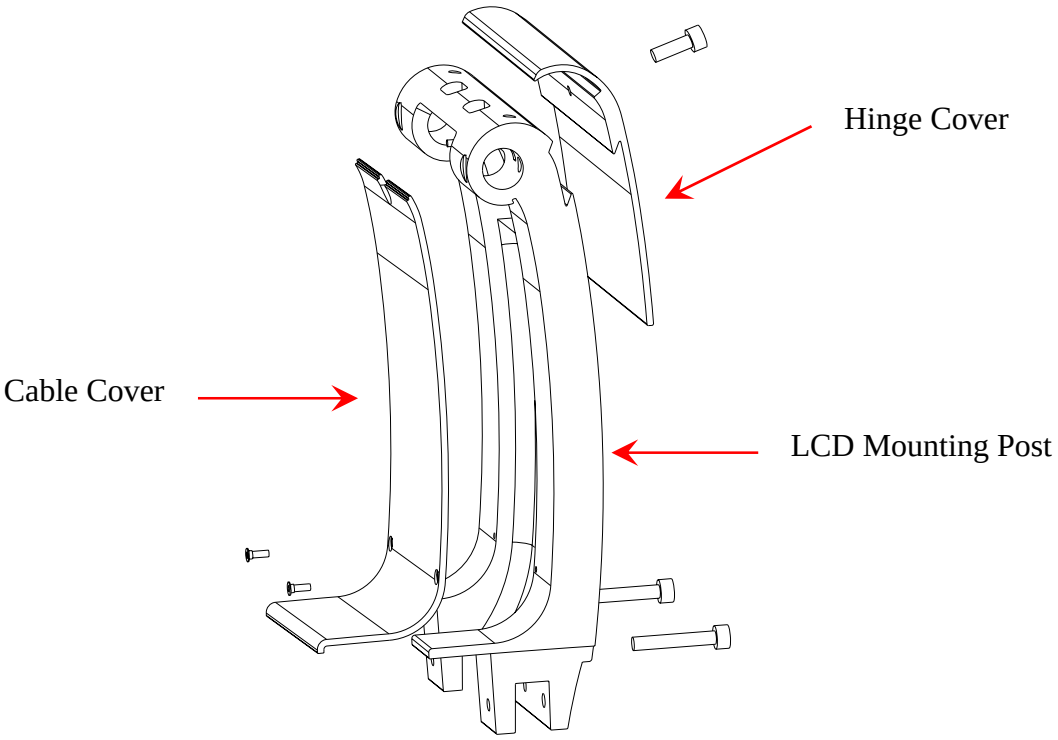
8.4” RichPOS-2000



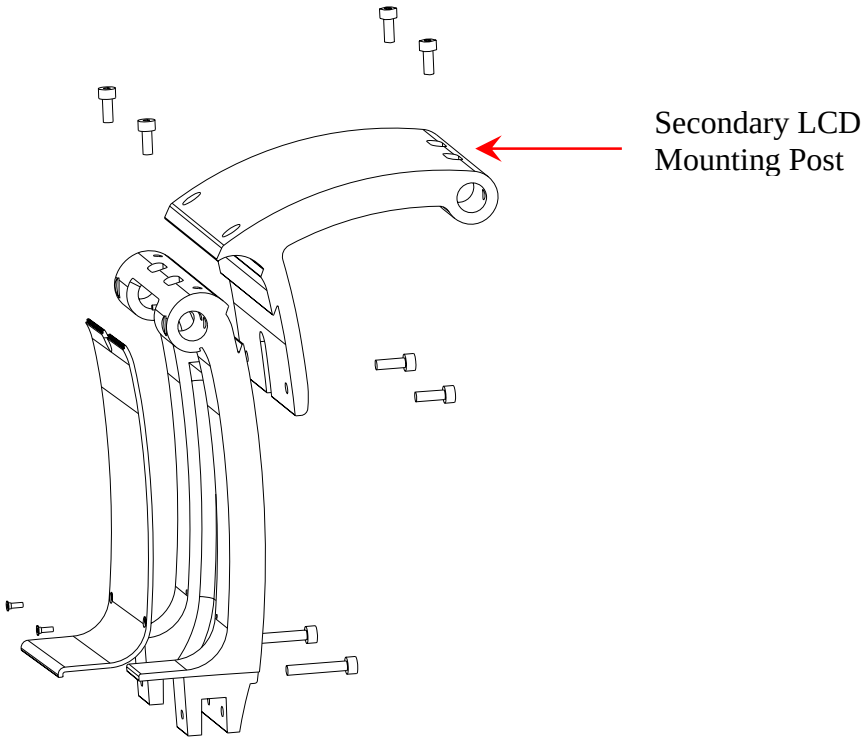
14.1” RichPOS-2000



Single LCD Panel Holder



Dual LCD Panel Holder



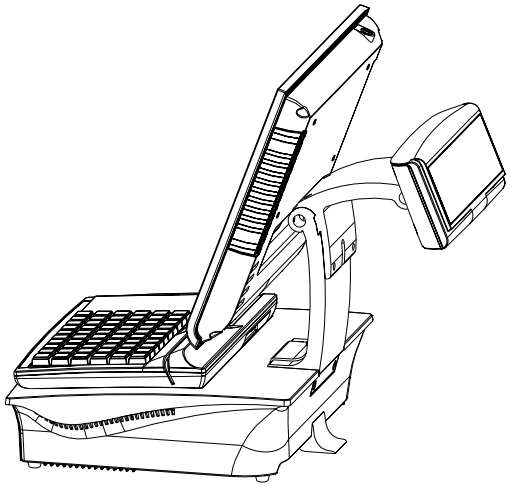
What comes with RichPOS-2000

The following items are standard with RichPOS-2000:

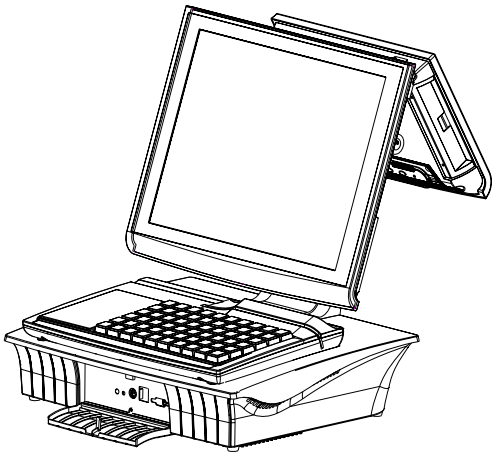
- Main system with 14” or 8” LCD panel
- Power adapter
- User’s guide
- FIR-ULV600-DVR motherboard user’s guide
- Motherboard chipset driver CD
- AC power cord

The following items are optional:

- 8.4” TFT-LCD Customer Display
- 60 keys keyboard with Magnetic Card Reader (MCR).
- VFD customer display
- Wireless LAN

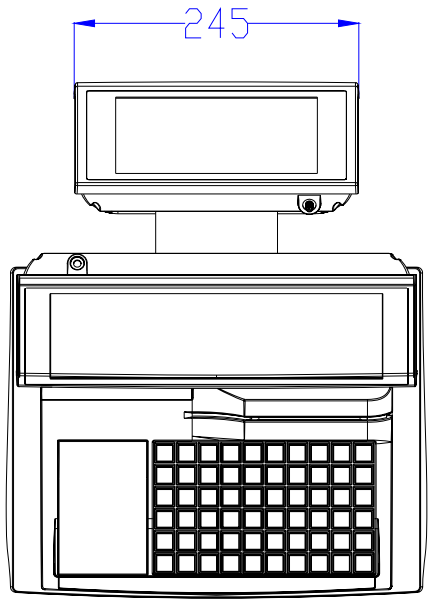


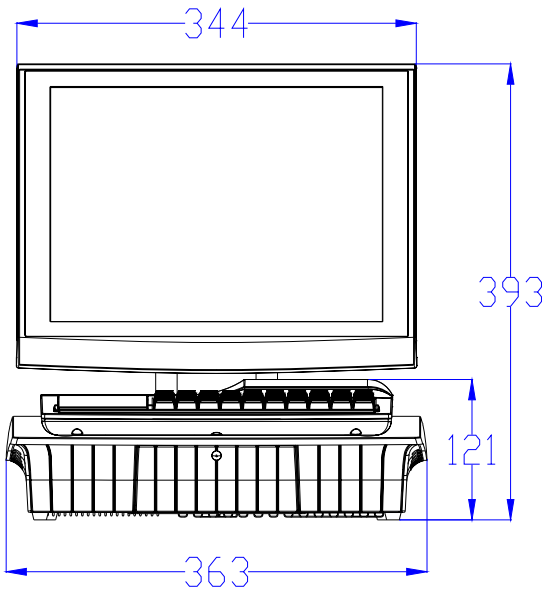
14” RichPOS -2000
With VFD customer display

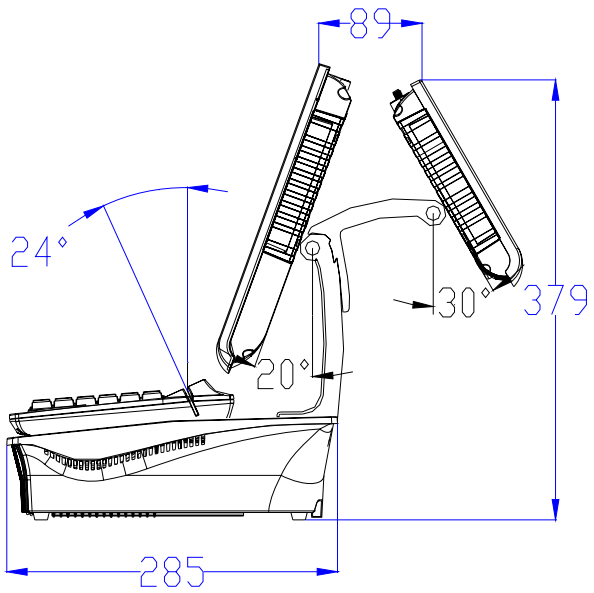


14” RichPOS-2000
With 8.4” TFT-LCD Panel customer display

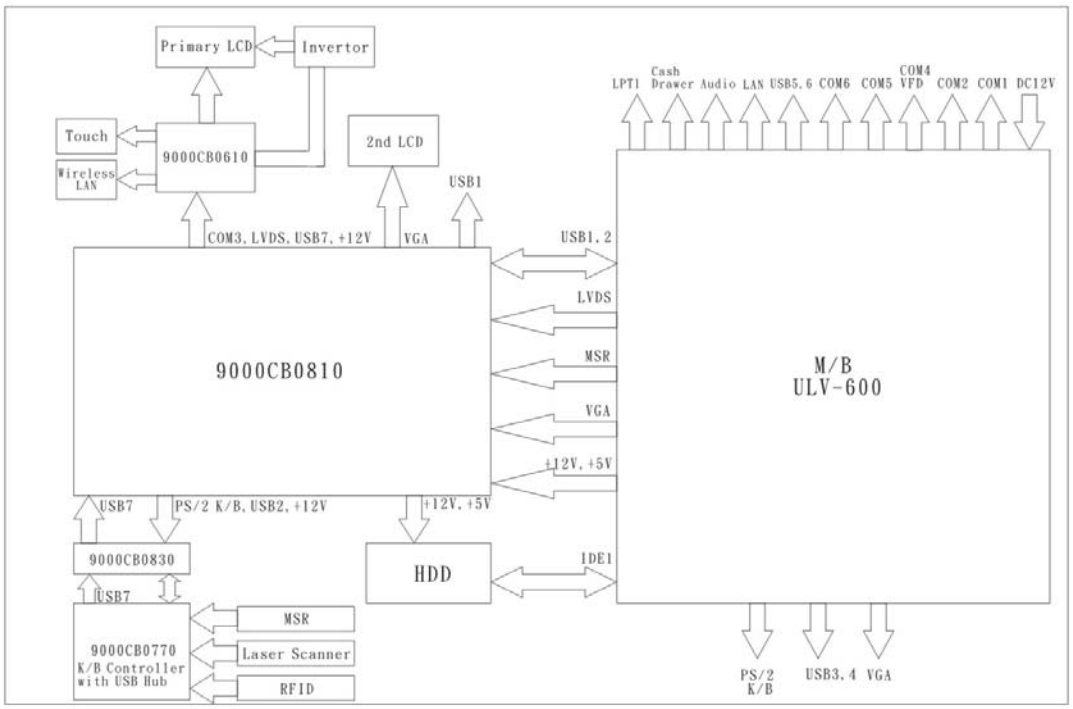
RichPOS-200 Dimensions

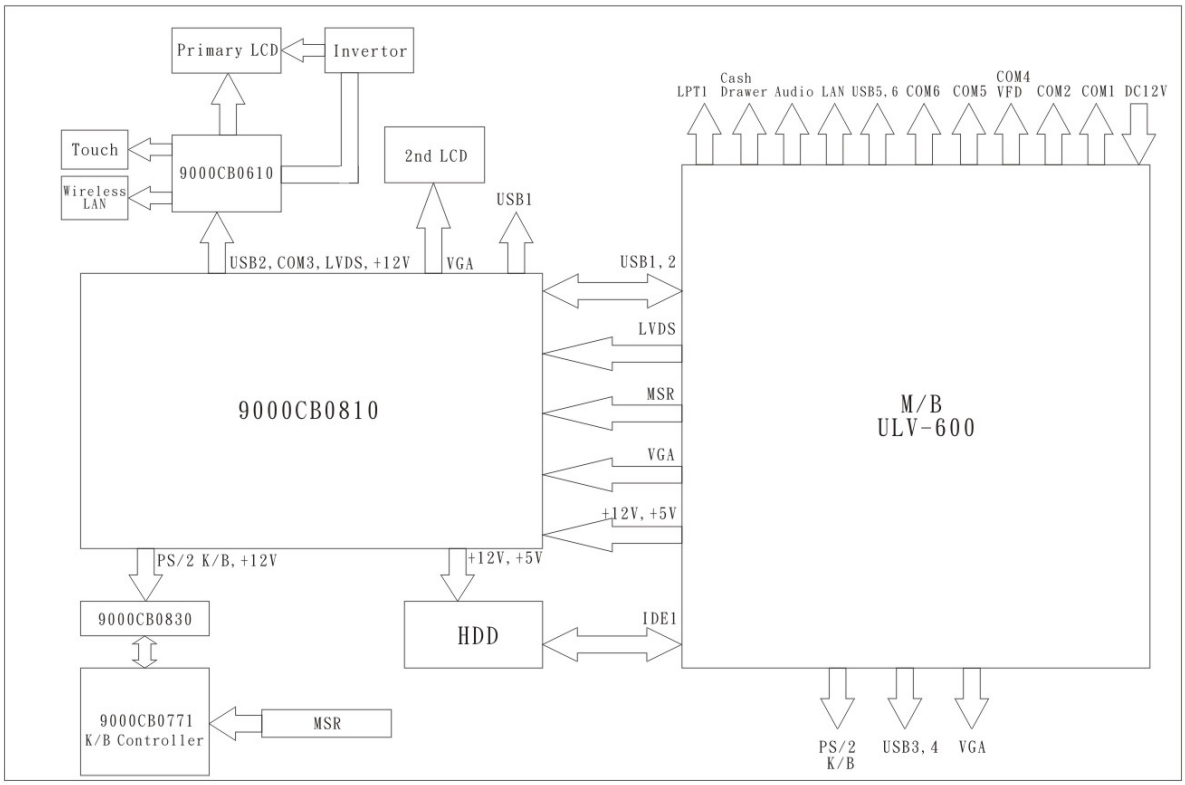






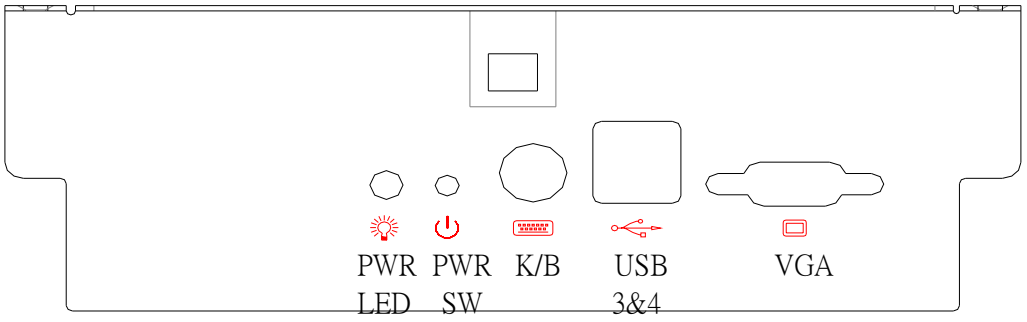
FIR-ULV600-DVR Main Board





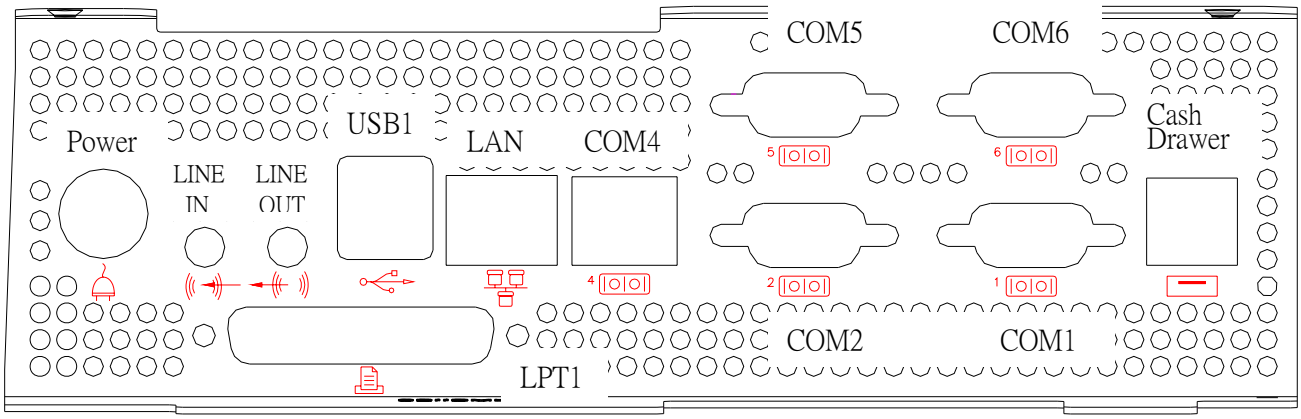
Connector Panels

Font Connector Panel



I/O Port	Connector Type	Description
USB 3 & 4	USB Type A	These are USB version 2.0 ports and can be used to connect most USB devices.
VGA	VGA Connector	The VGA port is for use with an external LCD or CRT monitor.
K/B	PS/2 Keyboard Connector	The K/B port for an external keyboard.
PWR SW	**Power Switch** Tactile Switch	ATX power switch function.
PWR LED	**Power LED**	

Rear Connector Panel



I/O Port	Connector Type	Description
Power	DC Power Connector	Connects RichPOS-2000 to the power supply.
Cash Drawer	RJ11 Connector	Cash Drawer Connector, 12 V Actuation support for solenoid.
Line Out	Earphone Connector	The audio port is for speakers.
LAN	LAN RJ45 Connector	The LAN port is used to hook RichPOS-2000 to a local area network.
COM1、COM2 COM5、COM6	D-sub Connector	The serial ports COM1/COM2/COM5/COM6 can be used to connect serial devices such as a serial printer or a fax/modem. (Note 1)
COM4	VFD/ COM4 RJ45 Connector	This RJ45 port is used to attach a VFD customer display or may be used as an additional serial port.
USB 1	USB A Connector	This is a USB version 1.1 for additional devices

Note1: Com5 & Com6 ports will be assigned with DVR Application

Chapter 2

Hardware Setup

RichPOS-2000 Assembly

Please make sure that the power supply is disconnected when making any hardware changes to **RichPOS-2000.**

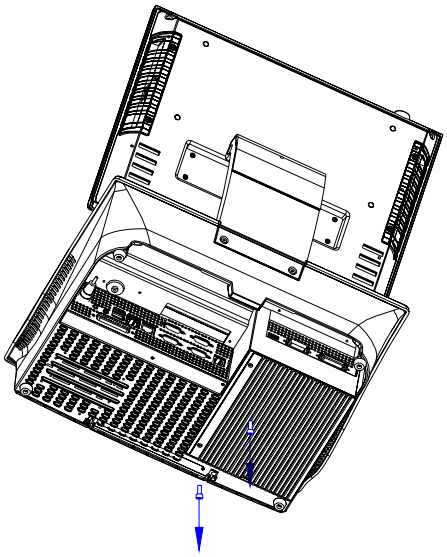
Hard Disk Drive Installation

A standard **RichPOS-2000** comes without a hard disk drive (HDD), unless it is pre-requested.

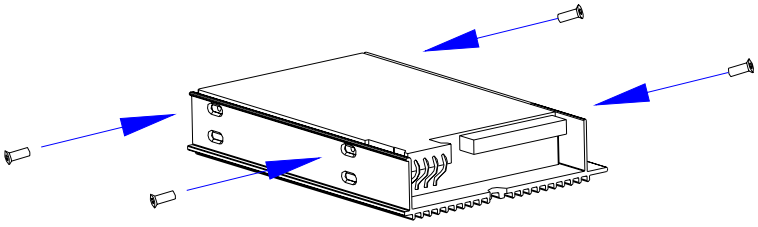
Installing a HDD

1. Turn off power and remove power cable from main unit.

2. **Remove two screws from the HDD cover**

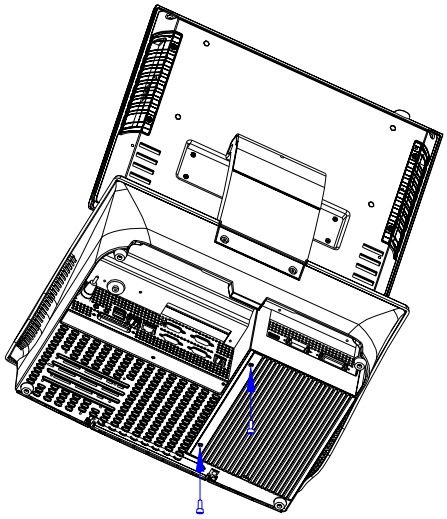


3. **Place HDD on the HDD cover with 4 screws.**



4. **Connect the existing 40pin ribbon cable and 4pin power cable to the HHD**

5. **Screw the cover back to the unit with two screws.**



6. Connect the main unit power.

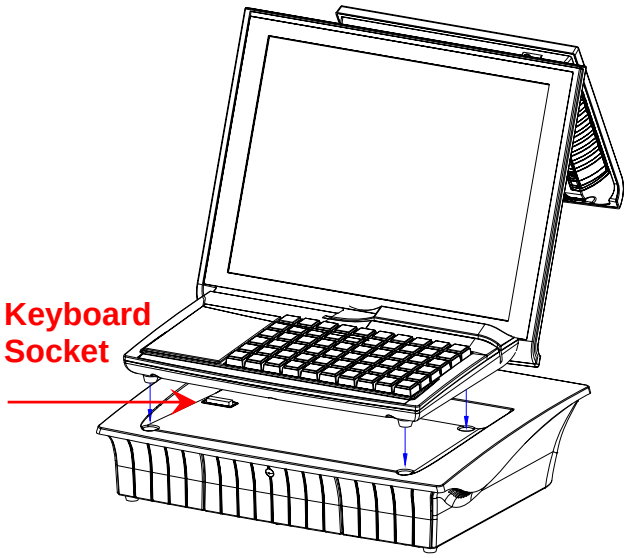
Note: If the HDD does not work normally, please refer to **troubleshooting**

60keys Keyboard Installation

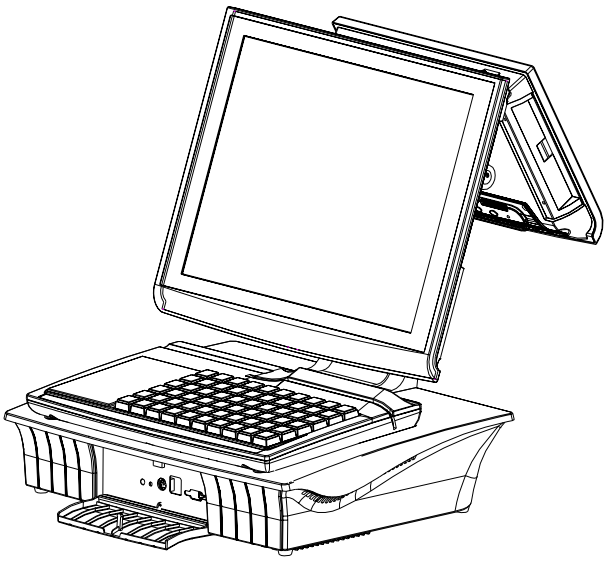
Installing60Keys Keyboard

1. Turn off **power** and remove power cable from **RichPOS-2000.**

2. **The Keyboard is install or replace at the vertical direction**



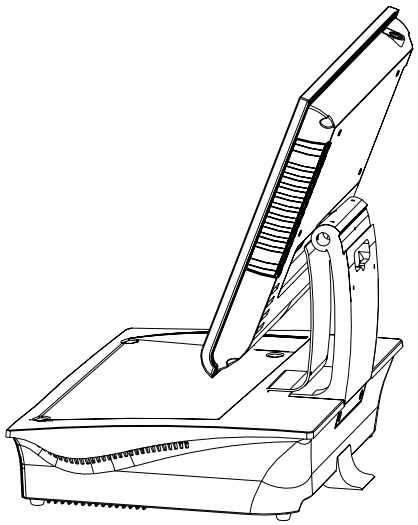
There are two types of keyboard available , one include USB 4 ports Hub, this is reserved for customer specific devices the other is without USB Hub function, please refer to 9000PB0810 I/O Board Jumper setting USB2 signal routing Jumper J2 and J3



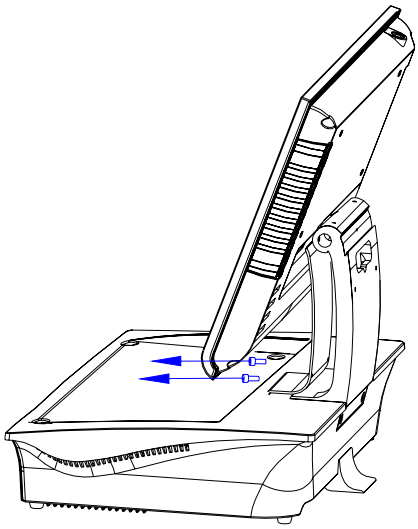
14” 1st TFT-LCD Display Installation

Installing 1st VGA Display

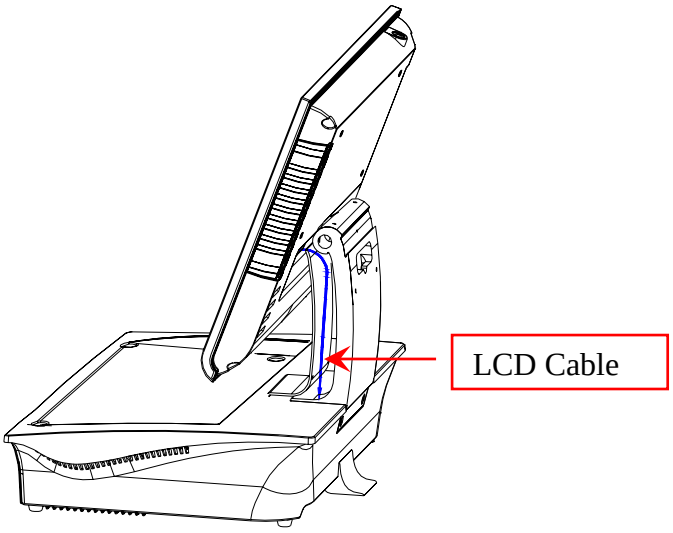
1. **To remove60 Key’s keyboard**



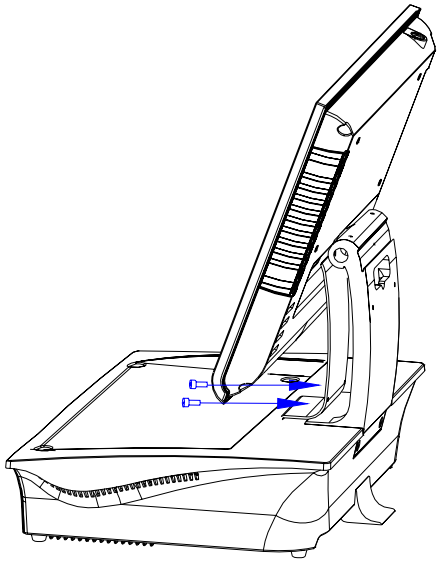
2. **To remove 2 screw of the cover from the neck**



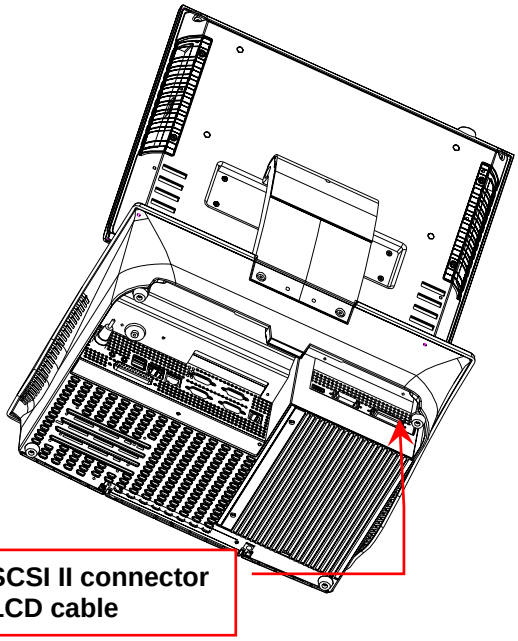
3. **Insert 1st LCD Panel Cable through the neck and to Case bottom**



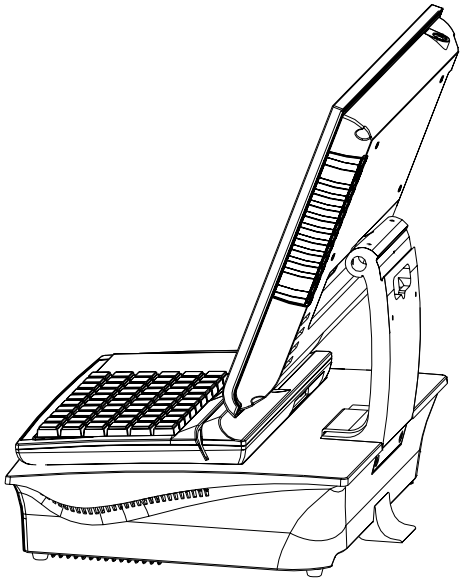
4. **Screw back the front cover with 2 screws**



5. Connect the display cable to 36 pin SCSI II connector



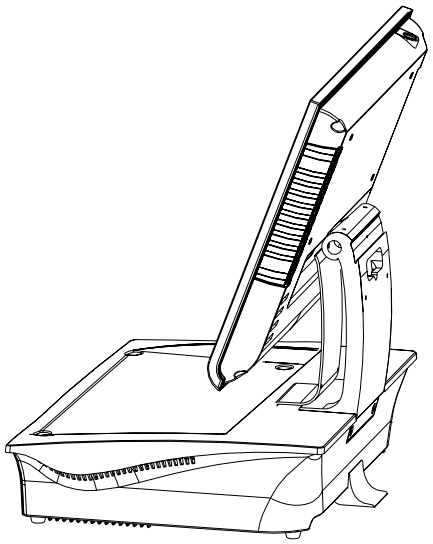
6. **Put K/B back to the system and Torn on system power**



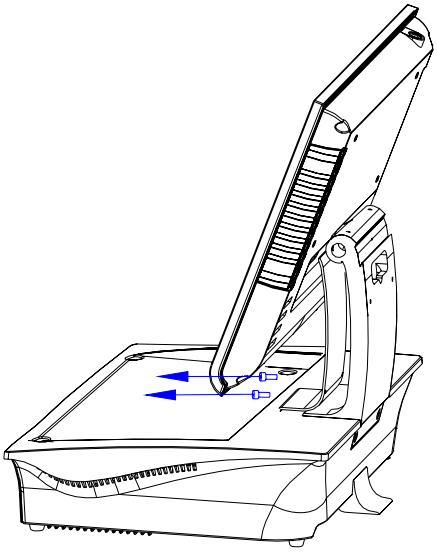
8.4” 2nd TFT-LCD Display Installation

Installing 2nd VGA Display

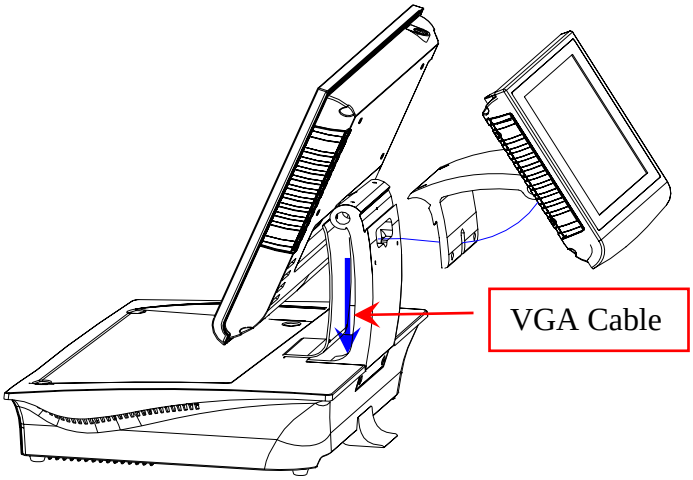
1. **To remove60 Key’s keyboard**



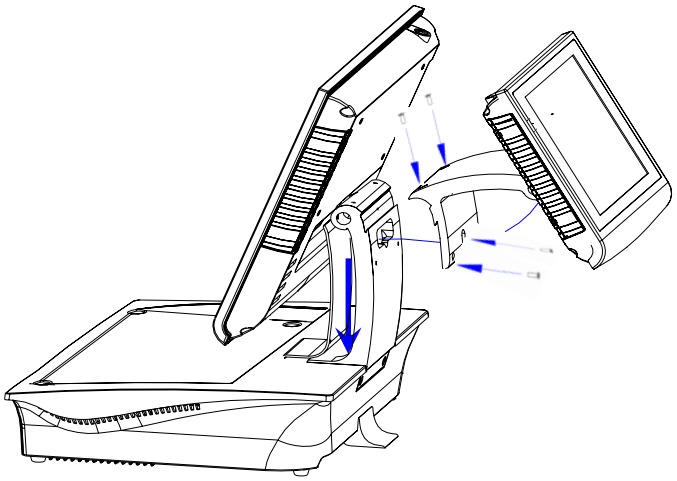
2. **To remove 2 screw of the cover from the neck.**



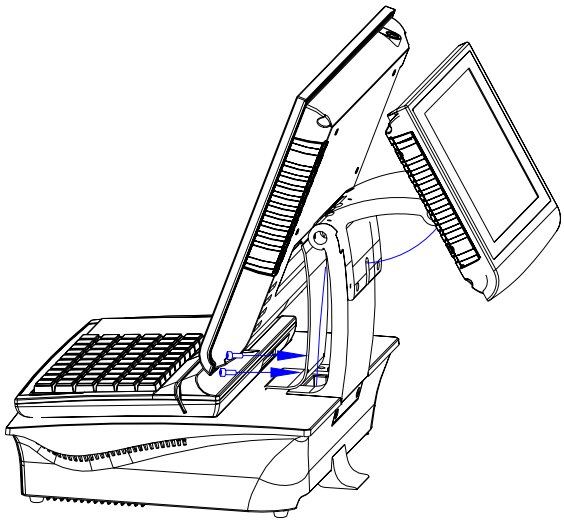
3. **Insert VGA Cable through the neck to Case bottom**



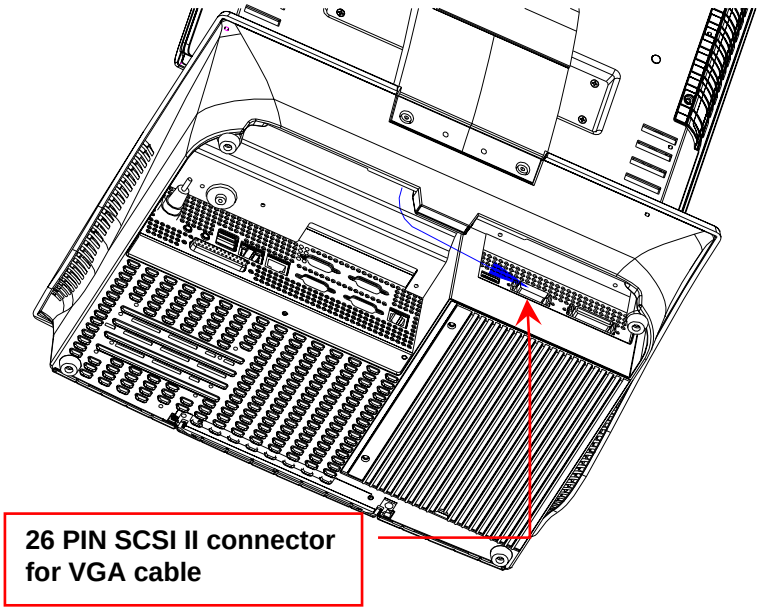
4. **Mount 2nd VGA Display holder to the neck with 4 screws**



5. **Screw back the front cover with 2 screws and put K/B back to the system**

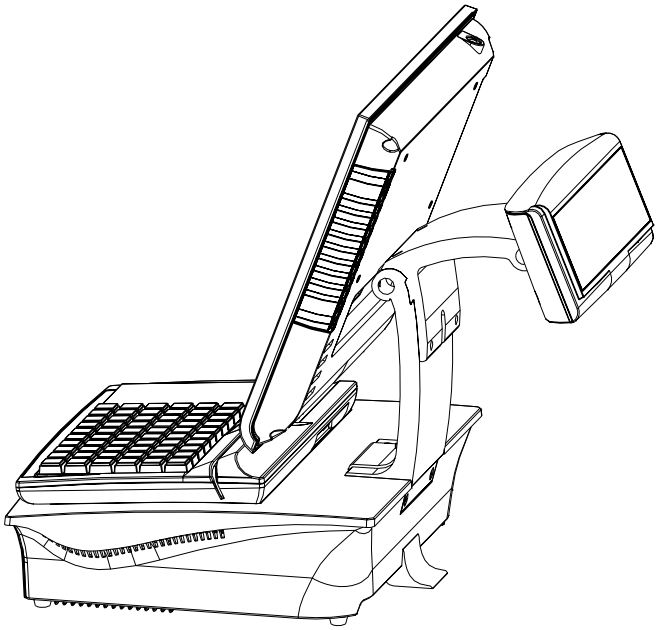


6. **connect 2nd VGA display cable to 26pin SCSI II connector**



VFD Customer Display Installation

An optional VFD customer display can be installed on the back of **RichPOS-2000**.

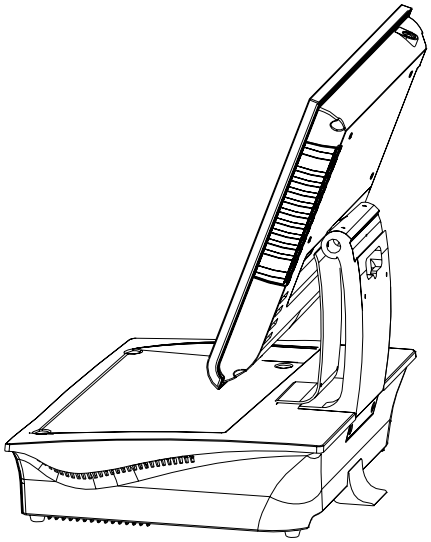


Rear view with VFD attached.

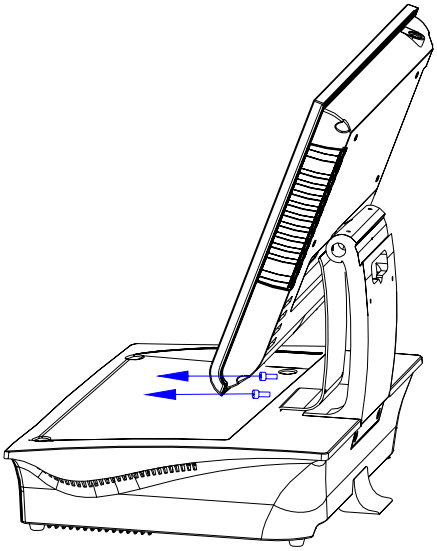
Installing a VFD

1. Turn off system power.
2. Make sure that J**P8 and JP9** on the M/B are set correctly. It is important to note that the supply voltage for the customer display has been set to +12V, which is for **VFD** type. If an **LCD** customer display is chosen, please change it to +5V through JP8 on M/B. Please refer to page 11 of FIR-ULV600-DVR motherboard manual COM4 Voltage selection and COM4 mode selection.

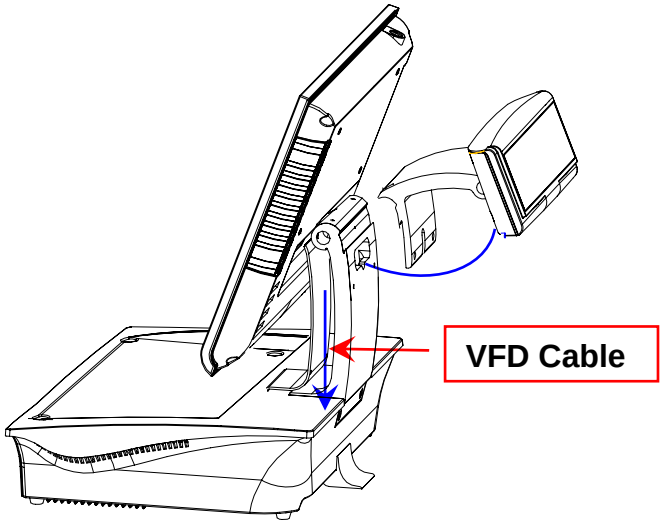
3. **To remove60 Key's keyboard**



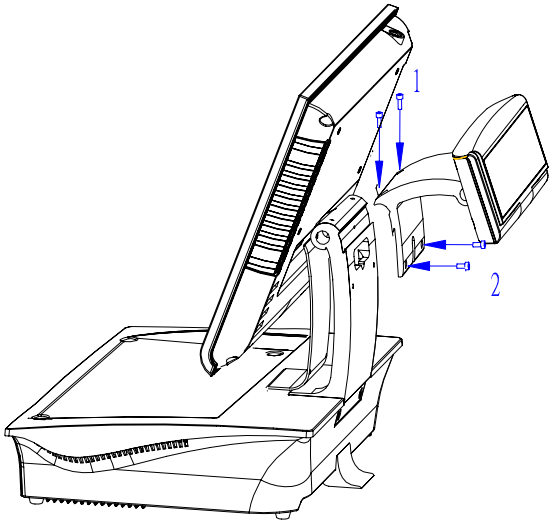
4. To remove 2 screw of the cover from the neck.



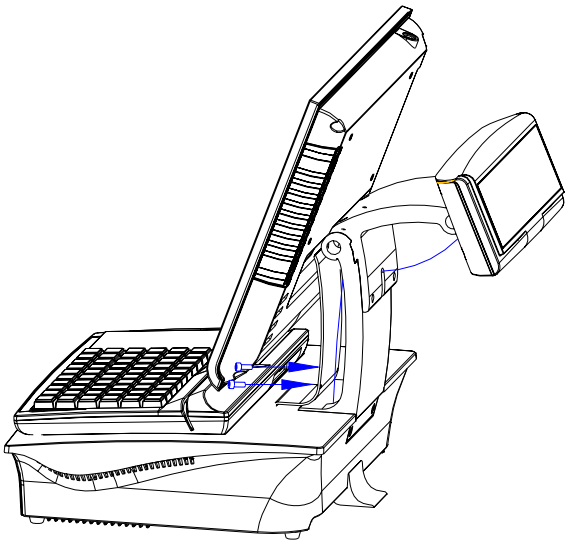
5. Insert the VFD cable through the neck to the button



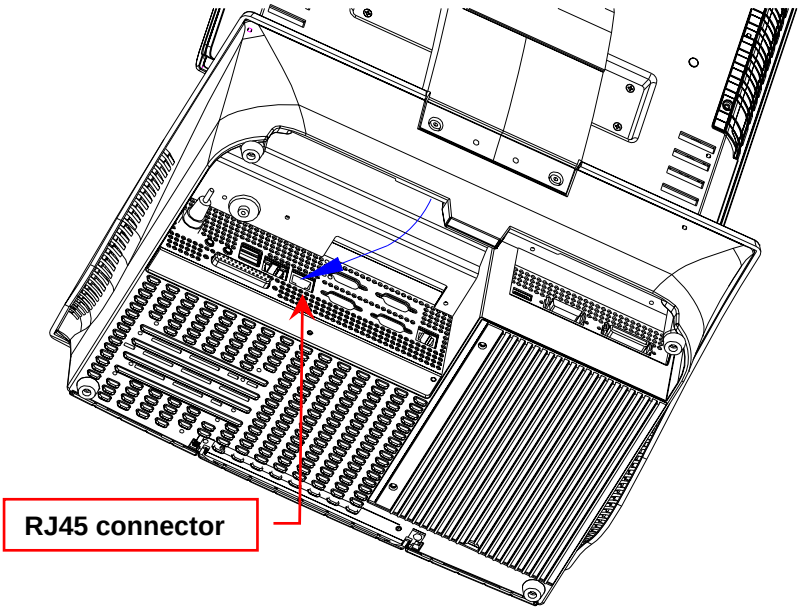
6. Mount VFD module to the neck with 4 screws



7. **Screw back the front cover with 2 screws and put K/B back to the system**



8. Connect VFD cable to COM4 port



9. Turn on system power.

Note: If the VFD does not display correctly after an application is loaded, please refer to **troubleshooting**.

MCR Parameter Modification

This option is for users who need to customize the MCR parameters for a particular task.
Some of the useful parameters include:

The selection of country code, other than the default English.

The choice of track combinations.

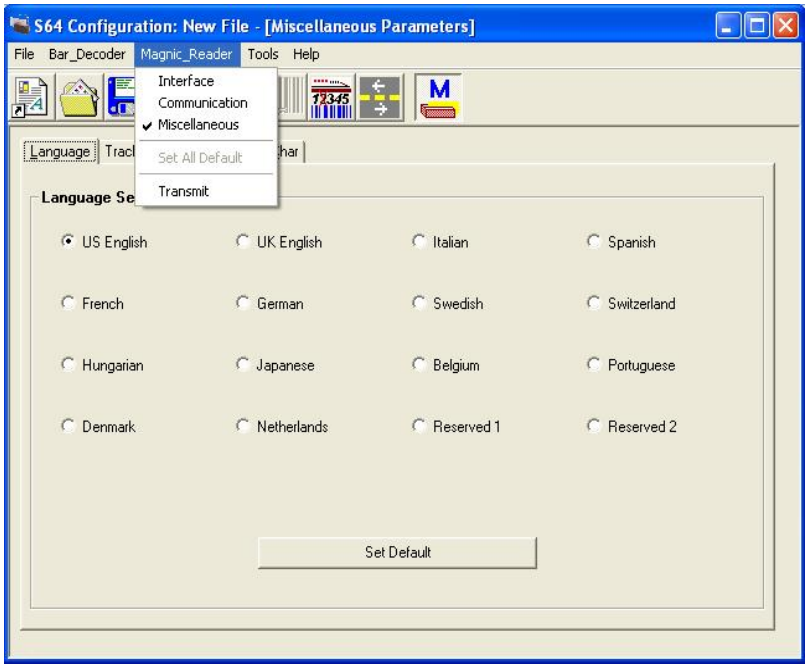
The preamble/post amble codes.

The MCR parameters can be modified by using the supplied utility program.
The utility can be found on the CD that came with your system in the “Utilities” folder. The program name is msr_v12_win.zip.
If you are upgrading and earlier system to include our MCR reader, then this utility can be located on our website at http://www.firich.com.tw/tech_drivers.htm in the section labeled as “MSR Utility”.

Unzip this file onto your system hard disk, in a folder of your choice.
It will also create 3 subfolders named Disk1, Disk2, and Disk3.
Change to the folder “**Disk1**” and run the “**Setup.exe**” program, and follow the simple onscreen instructions.
When the installation finishes, you will find that a new folder has been created in your “Program files” folder, labeled as “Decoder” with a subfolder named “S64 Decoder”.

Now change folder to **C:\Program Files\Decoder\S64 Decoder** and run the program named “**S64_cfg.exe**”.

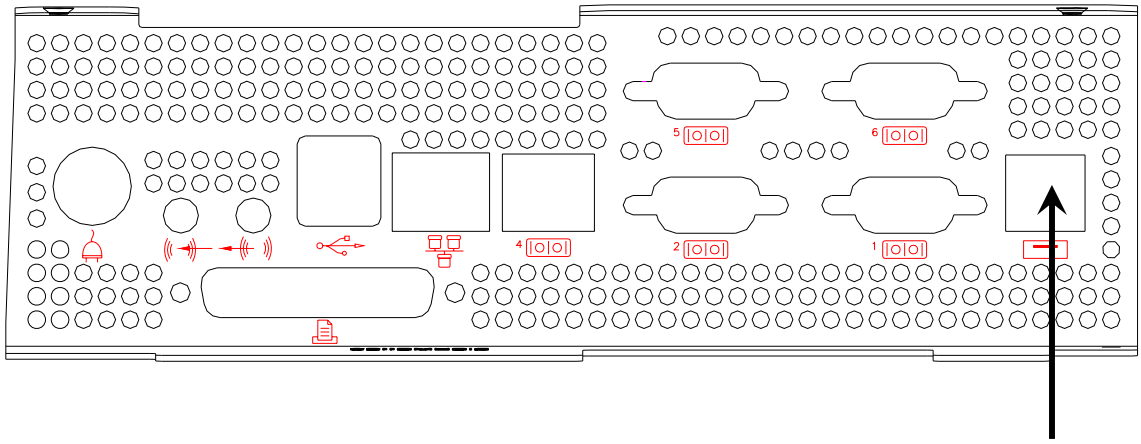
When the program has loaded please select the **Magnic_Reader** menu item as in the following picture. By using the 3 top items listed; **Interface**, **Communication** and **Miscellaneous**, you will be able to alter many of the parameters associated with the MCR unit.
When you have finished your modifications and are sure that they are set exactly how you want them to be, just click on the menu item **Transmit** to download the new parameter to the MCR unit.
Please refer to the Help menu for any further assistance.



Cash Drawer Installation

Before connecting the cash drawer to the **RichPOS-2000**, please make sure the drive voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of **RichPOS-2000**. Please refer to **page 21** in the motherboard manual for more information on the Cash Drawer.

Plug cash drawer cable into cash drawer port.



Note: If the cash drawer cannot be detected by the system, please refer to **troubleshooting.**

Up to two cash drawers may be driven from this port. Driving voltage of the solenoid is DC+12V. I/O port 280h is used for drawer operation. A test program is supplied, for Linux and Windows, source code of which is available on request by software developers.
Hardware logic is as follows.
To open drawer1, write 01h to port 280h, wait 200 msec, then write 00h to turn off the drive.
To open drawer2, write 02h to port 280h, wait 200 msec, then write 00h to turn off the drive.
To test for drawer open, read port **281h,** if bit 0=1 then drawer is open, if bit 0=0 drawer is closed.

CMOS Setup

Please refer to the **FIR-ULV600-DVR** M/B User's Manual Chapter 4 for a detailed description of the BIOS CMOS setup.

Chapter 3

Software Setup

Operating System Installation

Windows 98 SE installation

As it is not possible to attach an IDE CDROM drive to the **RichPOS-2000** unit, installing Windows 98 SE may appear to be difficult. There are a number of ways in which Windows 98 SE can be installed.

This is probably the easiest method.

This objective is to create a bootable MSDOS Compact Flash that will include all the required Windows 98 setup files.

Items required:

A PC or Notebook computer equipped with a CDROM drive, a Compact Flash reader/writer device, a 128MB or 256MB Compact Flash, a floppy disk drive with an MSDOS boot diskette that also contains the DOS system utilities “Fdisk” and “Format” programs.

* Real-mode CD-ROM drivers

You will need real-mode CD-ROM drivers loaded so you can access the Windows 98 Second Edition CD. If you have ever run Windows 98 SE Setup before and have created a Startup Disk, you can boot and use the CD-ROM drivers included on that disk. If you do not have a Startup Disk, you will need to run the installation program that came with your CD-ROM hardware.

1. Boot the PC or Notebook from the Floppy diskette
2. Insert the 128MB or 256MB Compact Flash into the reader/writer device
3. Use the Format program to format the Compact Flash as a “bootable” FAT16 volume
4. Copy all files from the floppy to the Compact Flash
5. Create a folder called "W98Flat" on the Compact Flash drive (to create a folder, switch to the Compact Flash drive letter and type: MD W98Flat
6. Now, switch to the Windows 98 Second Edition CD-ROM drive and to the Win98 directory
7. Then copy the Windows 98 Second Edition Setup files to the folder you just created on the Compact Flash by typing: Copy *.* < Compact Flash drive letter>\W98Flat
8. After all the files are copied, you may now remove the Compact Flash from the PC
9. Insert the Compact Flash into the **RichPOS-2000** (follow instructions earlier in this manual)
10. Modify CMOS BIOS to Boot from Compact Flash
11. Power on the system and the unit should boot MSDOS from the Compact Flash drive
12. At the MSDOS prompt, type FDISK and partition the Hard Disk drive as required

13. After partitioning is complete, Format the Hard Disk drive
14. At the MS DOS prompt change directory to W98Flat
15. Type Setup and press Enter
16. Follow the onscreen instructions for normal installation of Windows 98 SE

Windows 2K/XP installation

Installing Windows 2K or XP can be performed on the **RichPOS-2000** quite simply

Items required:

A USB CDROM drive

1. Attach the USB CDROM drive to **RichPOS-2000**.
2. In the CMOS setup “Advanced Chipset setup” change the item “USB Device Legacy Support” to “All Devices” this will allow booting from any USB bootable device.
3. Power on and modify CMOS BIOS settings to enable the USB CDROM to be the first bootable device (see CMOS setup in the motherboard manual)
4. Insert the 2K or XP CDROM disk into the drive
5. Reboot the system
6. The **RichPOS-2000** will boot from CDROM drive and automatically start the setup programs
7. Follow the onscreen instructions for normal installation of 2K or XP

Device Driver Installation

RichPOS-2000 comes with a variety of drivers for different operating systems.

You will find 1 CD with **RichPOS-2000**.

The CD has all the necessary drivers to setup **RichPOS-2000**.

Please follow this installation sequence exactly.

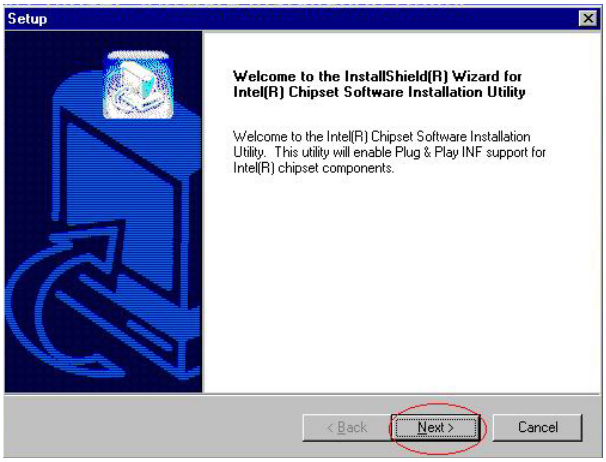
Driver installation sequence:

Chipset Driver -> VGA Driver -> LAN Driver -> Audio Driver -> USB Driver -> Touch Tools -> FIX COM PORT Tools

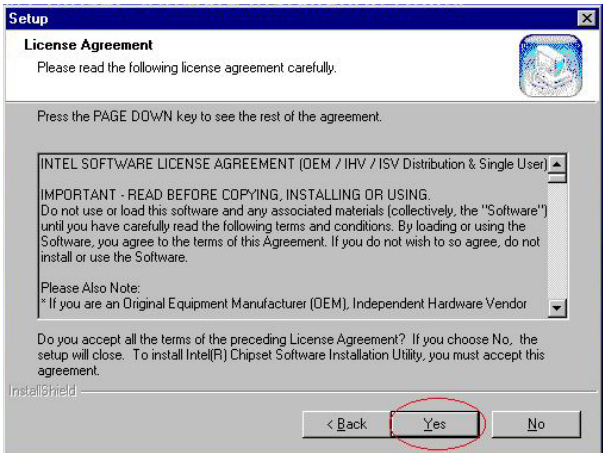
The reason to follow our sequence is that IRQ settings will be changed by Windows 2000 and XP to non supported values, and you may encounter unnecessary problems later.

Intel Chip Set Driver Installation for all Windows Operating Systems

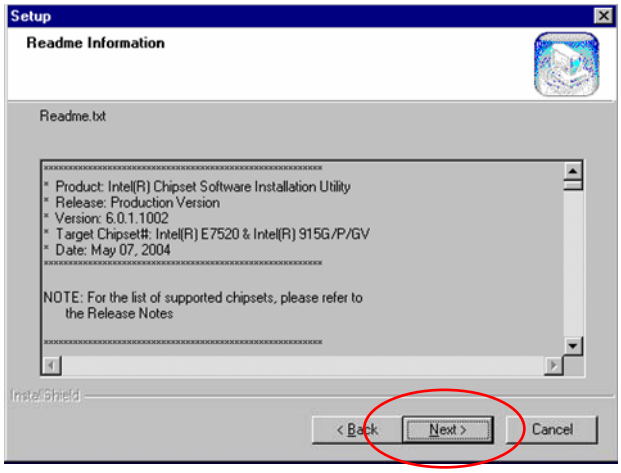
1. Insert the CD into your CD ROM Drive.
2. **Locate D:\ULV600.DVR\CHIPSET\INF folder**
3. Double click **Setup.exe**


Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

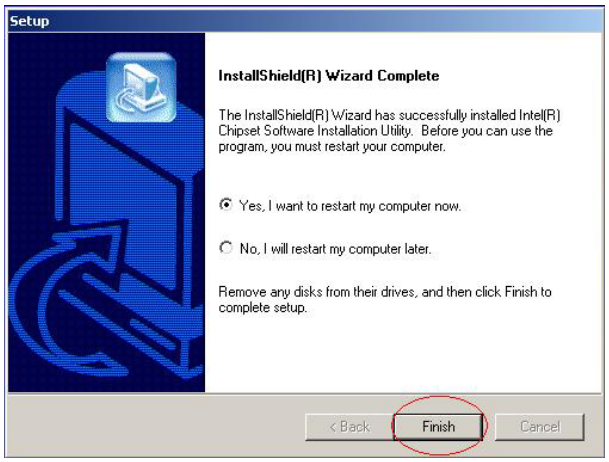
4. Click **Next**.


Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Intel(R) Chipset Software Installation Utility, you must accept this agreement.
InstallShield
< Back
Yes
No

5. Read the License Agreement and click **Yes**.


Setup
Readme Information
Readme.txt
* Product: Intel(R) Chipset Software Installation Utility
* Release: Production Version
* Version: 6.0.1.1002
* Target Chipset#: Intel(R) E7520 & Intel(R) 915G/P/GV
* Date: May 07, 2004
NOTE: For the list of supported chipsets, please refer to the Release Notes
InstallShield
< Back
Next >
Cancel

6. Click **Next** and the drivers for the Intel Chip set will install.


Setup
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Chipset Software Installation Utility. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

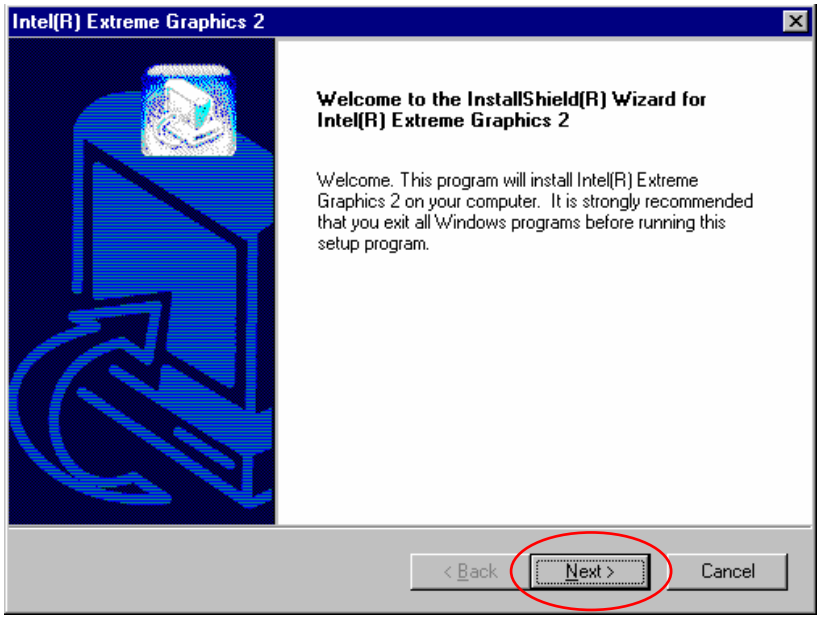
7. When the 'Setup COMPLETE' message appears click **Finish** to restart your computer.

VGA Driver Installation

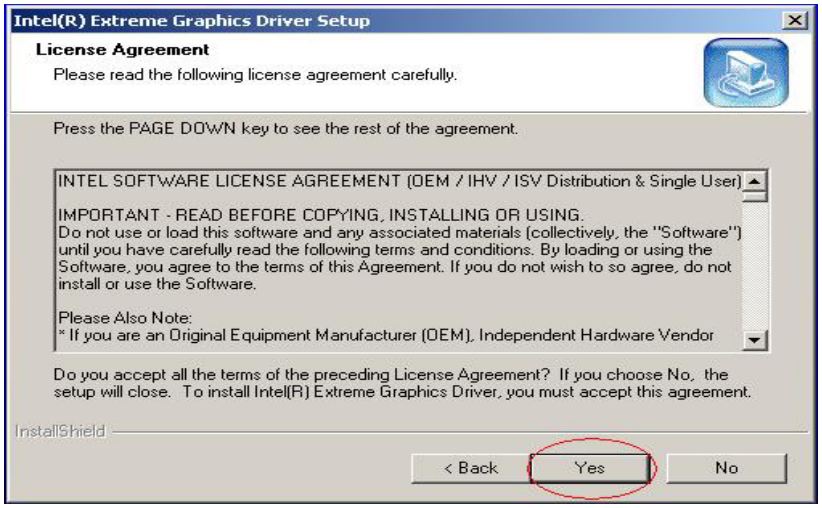
FIR-ULV600-DVR uses only one chipset “852GM” that is capable of driving a single or dual panel display. Only one driver needs to be installed.

852GM driver installation Windows 98 & ME

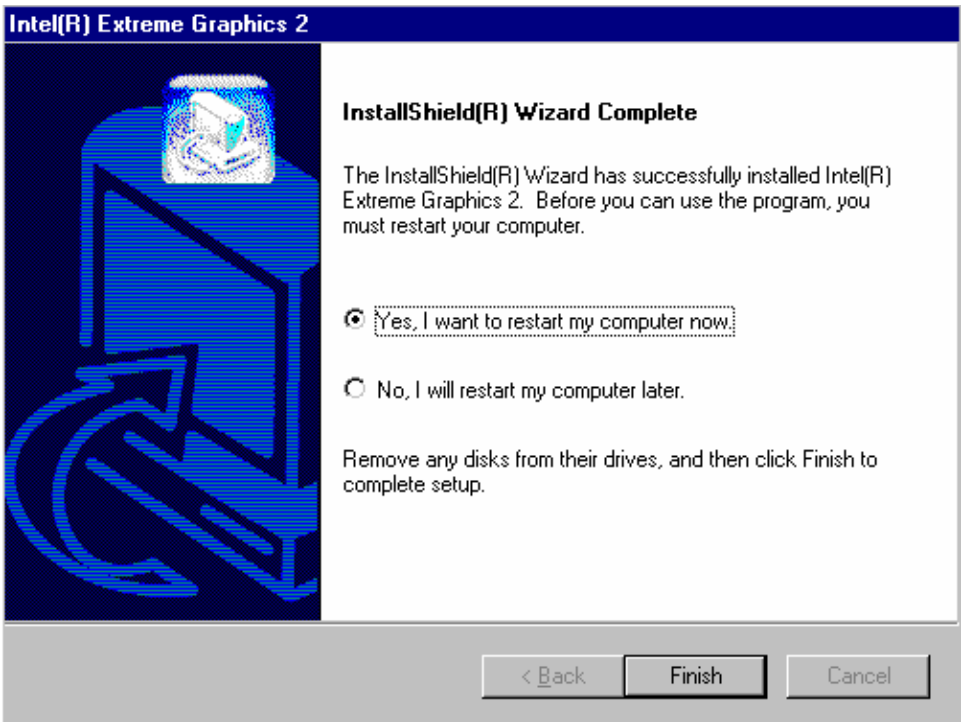
1. Locate the VGA folder on the utilities CD.
2. Open **D:\ULV600.DVR\VGA\INTEL\win9x** folder
3. Run **setup.exe**.


Intel(R) Extreme Graphics 2
Welcome to the InstallShield(R) Wizard for Intel(R) Extreme Graphics 2
Welcome. This program will install Intel(R) Extreme Graphics 2 on your computer. It is strongly recommended that you exit all Windows programs before running this setup program.
< Back
Next >
Cancel

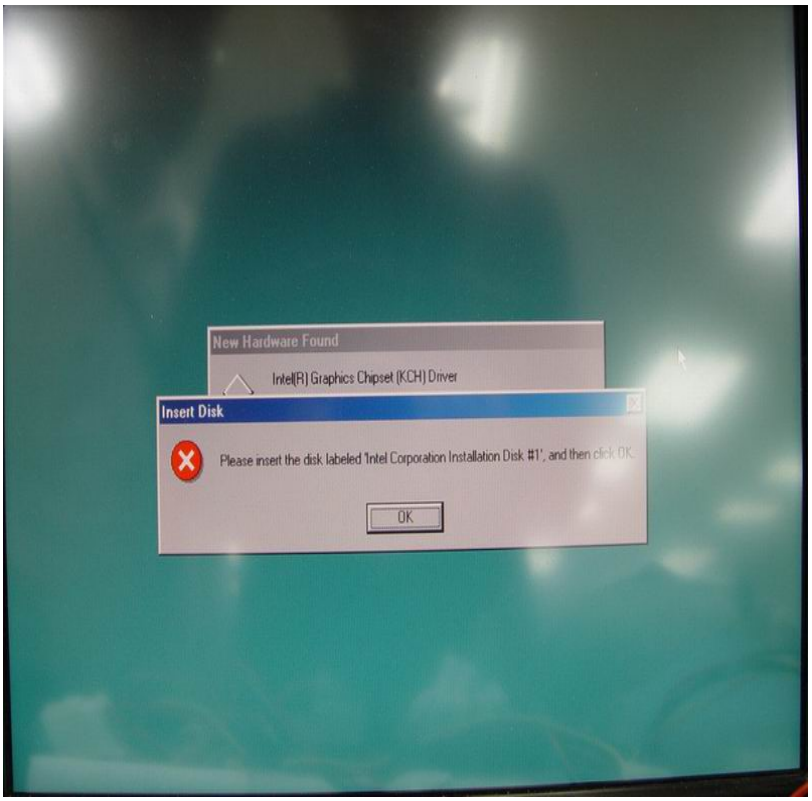
4. Select **Next** to continue.


Intel(R) Extreme Graphics Driver Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Intel(R) Extreme Graphics Driver, you must accept this agreement.
InstallShield
< Back
Yes
No

5. Read the License Agreement and click **Yes**.


Intel(R) Extreme Graphics 2
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Extreme Graphics 2. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

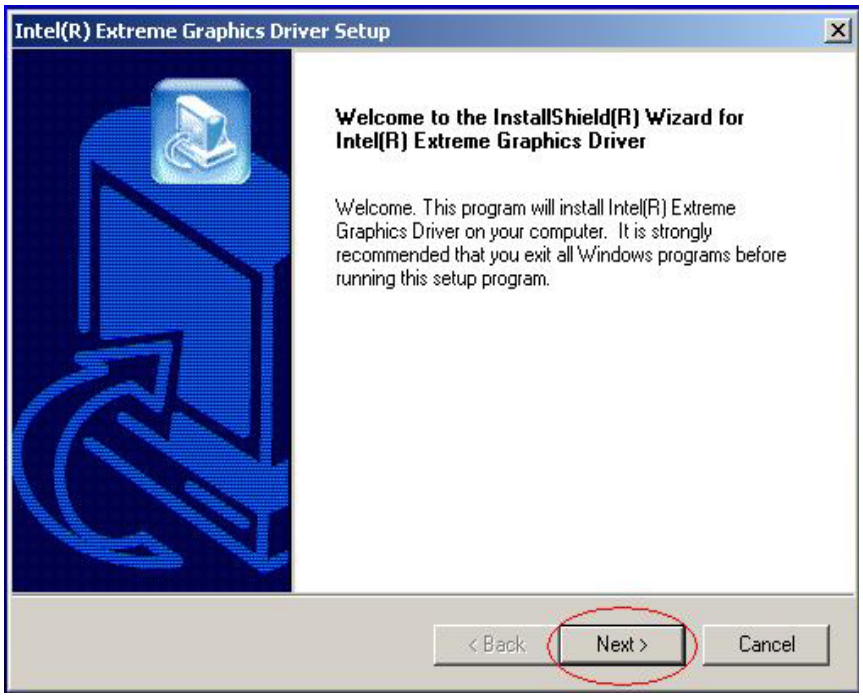
6. Click **Finish** to complete the installation procedure and restart the system.


New Hardware Found
Intel(R) Graphics Chipset (KCH) Driver
Insert Disk
Please insert the disk labeled 'Intel Corporation Installation Disk #1', and then click OK.
OK

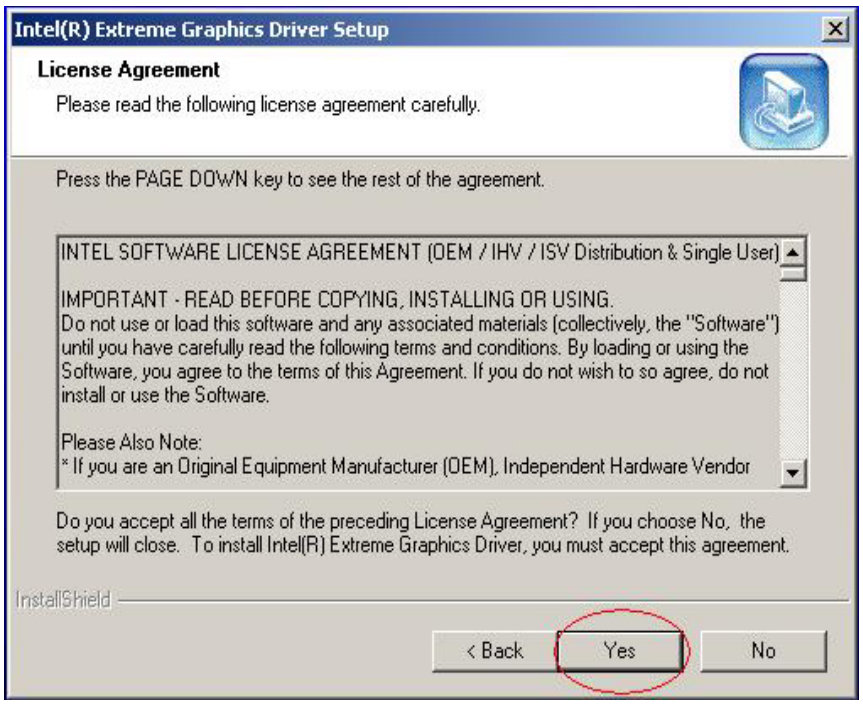
7. When entering Windows, Windows will find new hardware.
   Insert Disk
   Open **D:\ULV600.DVR\GRAPHIC\INTEL\WIN9X\WIN9X\ikch8xx.cat** folder
   Click **OK**

852GM driver installation Windows 2000 & XP

1. Open D:\ULV600.DVR\VGA\INTEL\WIN2K_XP folder.
2. Run **setup.exe**


Intel(R) Extreme Graphics Driver Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Extreme Graphics Driver
Welcome. This program will install Intel(R) Extreme Graphics Driver on your computer. It is strongly recommended that you exit all Windows programs before running this setup program.
< Back
Next >
Cancel

3. Select **Next** to continue.


Intel(R) Extreme Graphics Driver Setup
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
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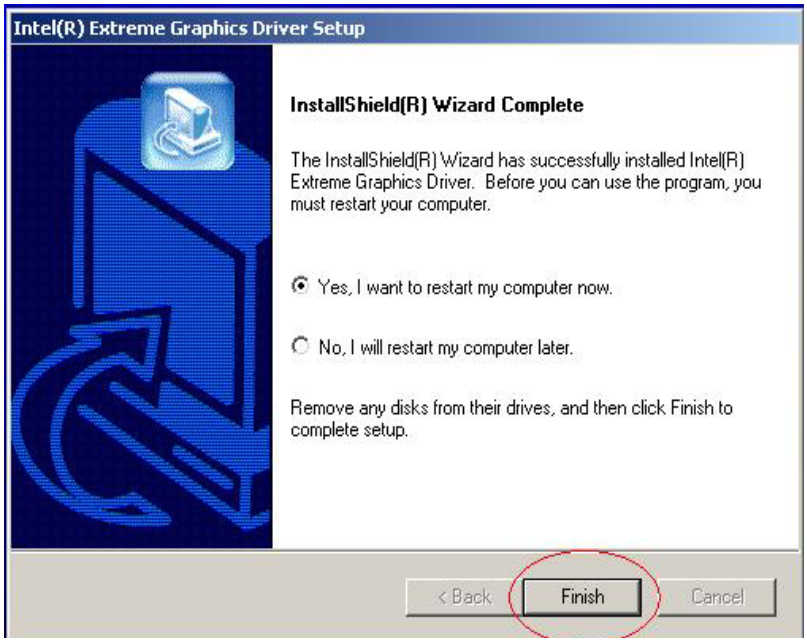
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Intel(R) Extreme Graphics Driver, you must accept this agreement.
InstallShield
< Back
Yes
No

4. Read the License Agreement and click **Yes**.


Intel(R) Extreme Graphics Driver Setup
InstallShield(R) Wizard Complete
The InstallShield(R) Wizard has successfully installed Intel(R) Extreme Graphics Driver. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

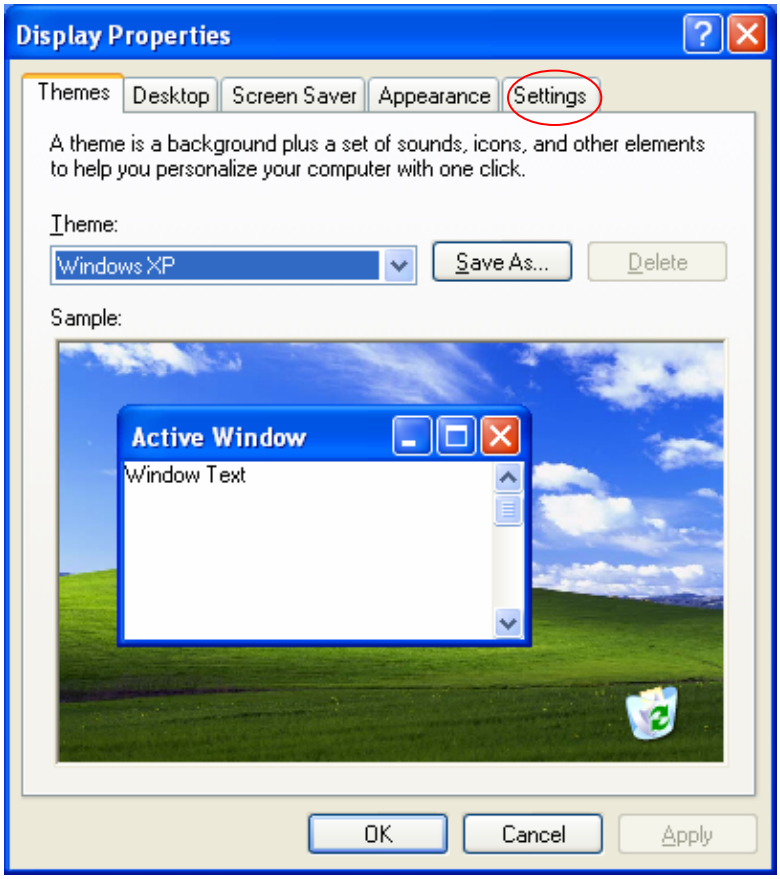
5. Click **Finish** to complete the installation procedure and restart the system.

Enable second LCD panel setting Windows 2000/Windows XP.

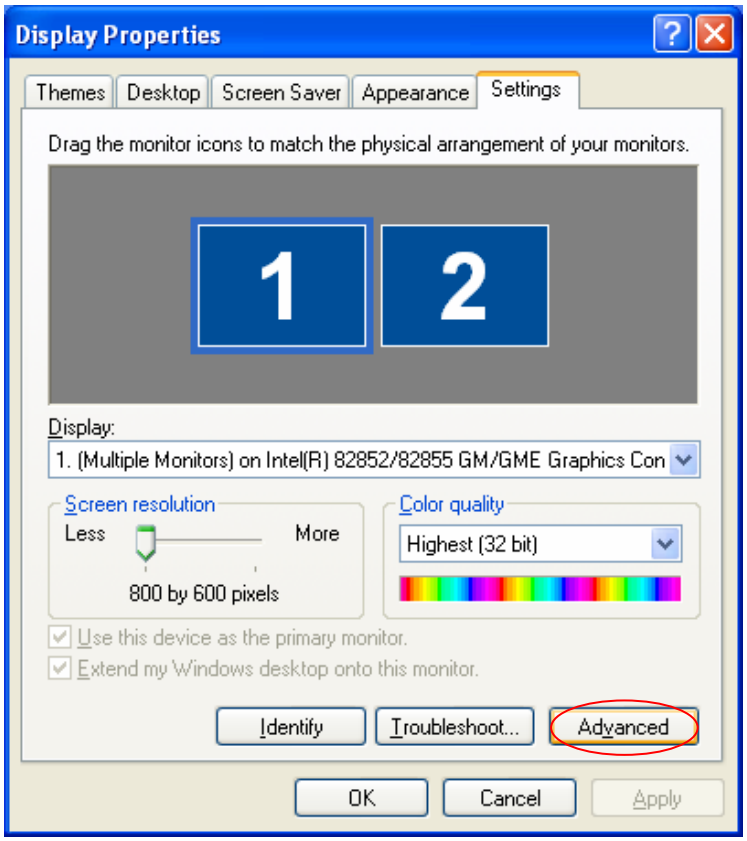
After you have installed the VGA driver you must adjust the settings.

.

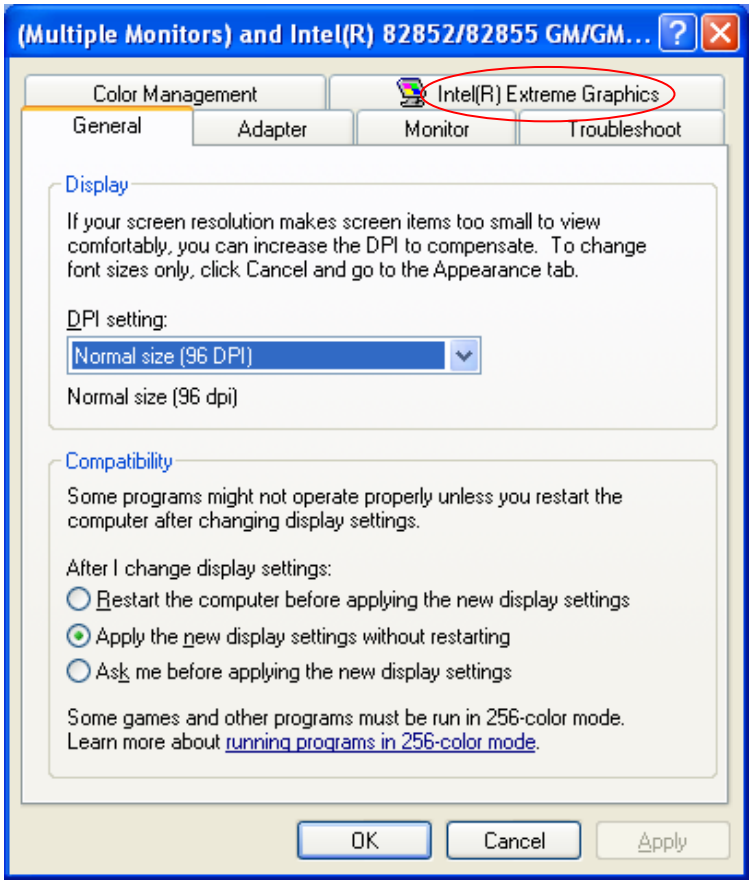
10. Right click your mouse anywhere on the desktop then click **properties**.



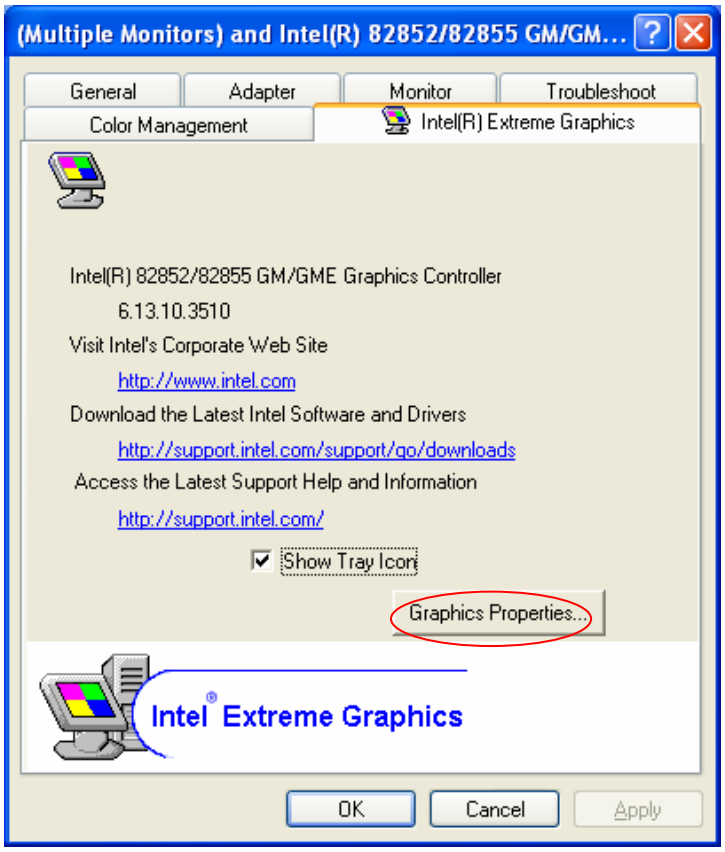
11. Click the **settings** tab.



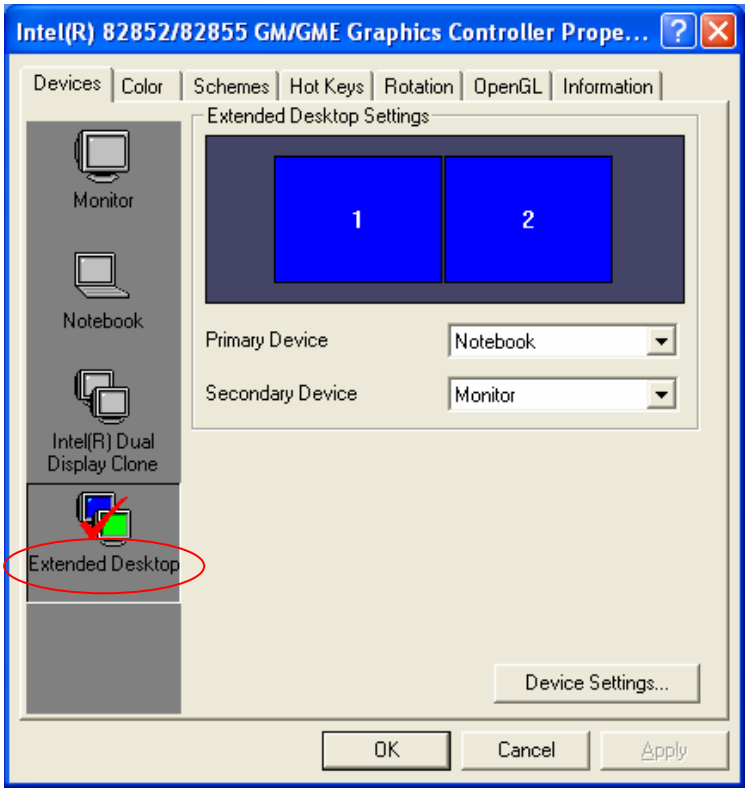
12. Click **Advanced**.


(Multiple Monitors) and Intel(R) 82852/82855 GM/GM...
Color Management
Intel(R) Extreme Graphics
General
Adapter
Monitor
Troubleshoot
Display
If your screen resolution makes screen items too small to view comfortably, you can increase the DPI to compensate. To change font sizes only, click Cancel and go to the Appearance tab.
DPI setting:
Normal size (96 DPI)
Normal size (96 dpi)
Compatibility
Some programs might not operate properly unless you restart the computer after changing display settings.
After I change display settings:
Restart the computer before applying the new display settings
Apply the new display settings without restarting
Ask me before applying the new display settings
Some games and other programs must be run in 256-color mode.
Learn more about running programs in 256-color mode.
OK
Cancel
Apply

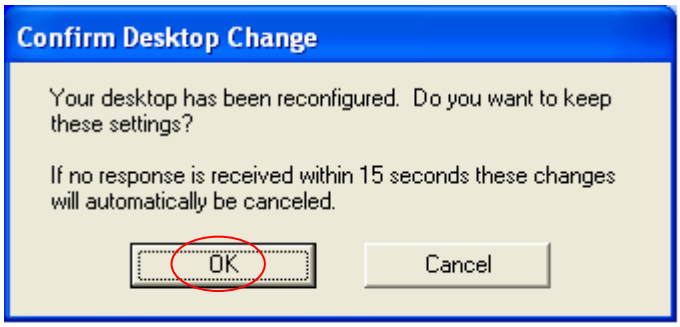
13. Click **Intel(R) Extreme Graphics**.



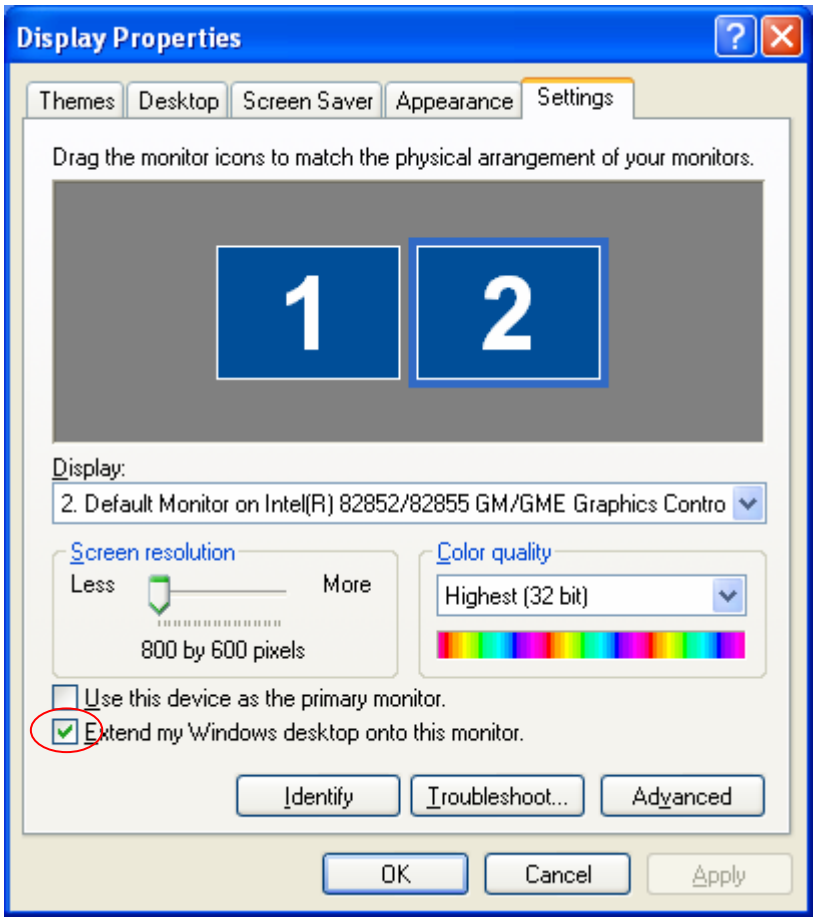
14. Click **Graphics Properties**.



15. Click **Extended Desktop** and select **Notebook** for primary device, **monitor** for secondary device.


Confirm Desktop Change
Your desktop has been reconfigured. Do you want to keep these settings?
If no response is received within 15 seconds these changes will automatically be canceled.
OK
Cancel

16. Click **OK.**



8. Select the second LCD panel. This is done either by clicking on the number 2 or selecting from the dropdown menu.

   For the second LCD panel make sure that **Extend my Windows desktop onto this monitor** is selected.

9. Click **Apply** then click **OK** to finish the settings.

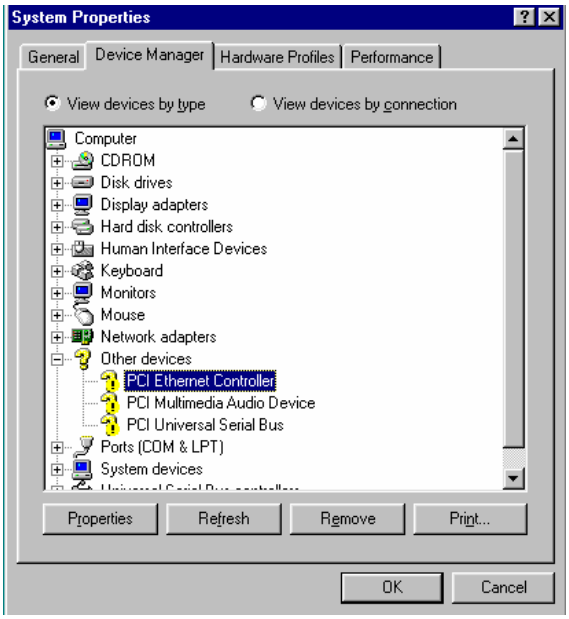
Note. During boot sequence "**No Sync**" will appear on the second LCD panel.
The boot sequence can take a minute or so when a second LCD panel is installed.

LAN Driver Installation

Realtek LAN Driver Installation Windows 98

1. Open Device Manger in the System Properties.

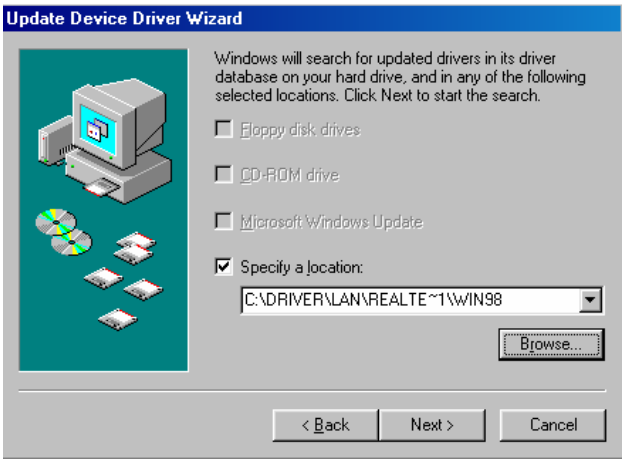
Select **PCI Ethernet Controller**



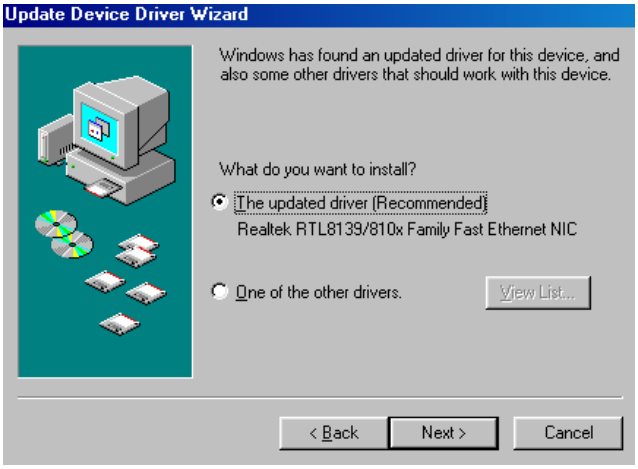
Click **Properties**

2. Select the **General** tab.

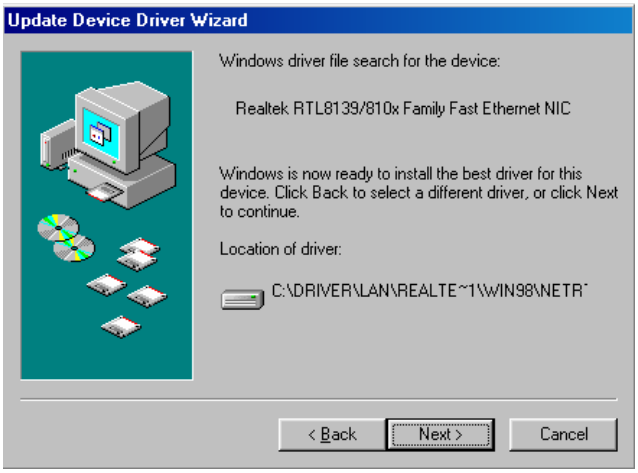
Click **Reinstall Driver**.


Update Device Driver Wizard
Windows will search for updated drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
C:\DRIVER\LAN\REALTE~1\WIN98
Browse...
< Back
Next >
Cancel

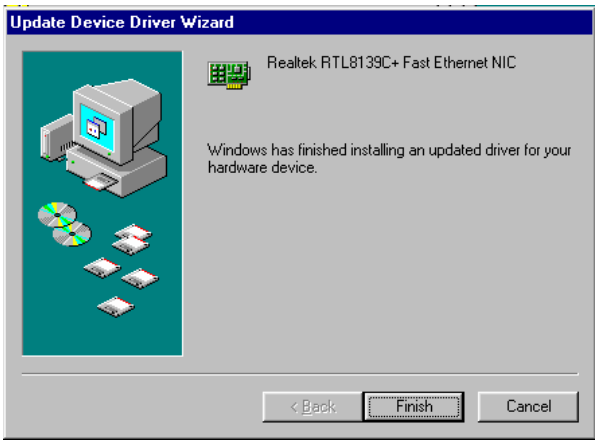
3. Select Specifily a location, click path "C:\ULV600.DVR\LAN\Realtek\Win98"
Click **Next**.


Update Device Driver Wizard
Windows has found an updated driver for this device, and also some other drivers that should work with this device.
What do you want to install?
The updated driver [Recommended]
Realtek RTL8139/810x Family Fast Ethernet NIC
One of the other drivers.
View List...
< Back
Next >
Cancel

4. Select The updated driver [Recommended].
Click **Next**.


Update Device Driver Wizard
Windows driver file search for the device:
Realtek RTL8139/810x Family Fast Ethernet NIC
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
C:\DRIVER\LAN\REALTE~1\WIN98\NETR
< Back
Next >
Cancel

5. Click **Next**.


Update Device Driver Wizard
Realtek RTL8139C+ Fast Ethernet NIC
Windows has finished installing an updated driver for your hardware device.
< Back
Finish
Cancel

6. Click **Finish**.

System Settings Change
To finish setting up your new hardware, you must restart your computer.
Do you want to restart your computer now?
Yes
No

7. Click **Yes** to restart your computer.

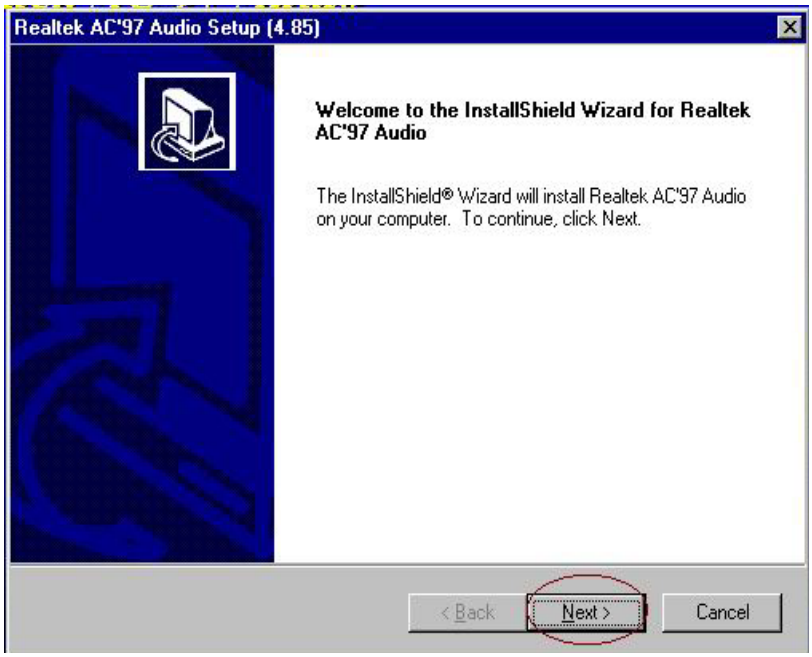
Realtek LAN Driver Installation Windows 2000 and Windows XP

After Windows 2000 is installed the Realtek LAN driver will be automatically installed.

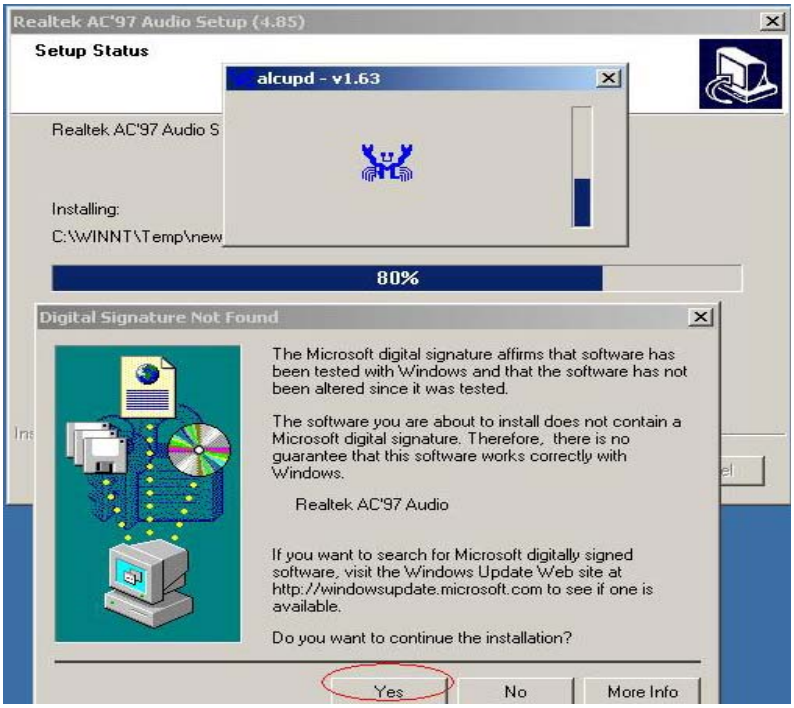
Audio Driver Installation

Audio Driver Installation for all Windows Operating Systems.

1. Open **D:\ULV600.DVR\AUDIO\Realtek**
2. double click **Setup.exe**.


Realtek AC'97 Audio Setup (4.85)
Welcome to the InstallShield Wizard for Realtek AC'97 Audio
The InstallShield® Wizard will install Realtek AC'97 Audio on your computer. To continue, click Next.
< Back
Next >
Cancel

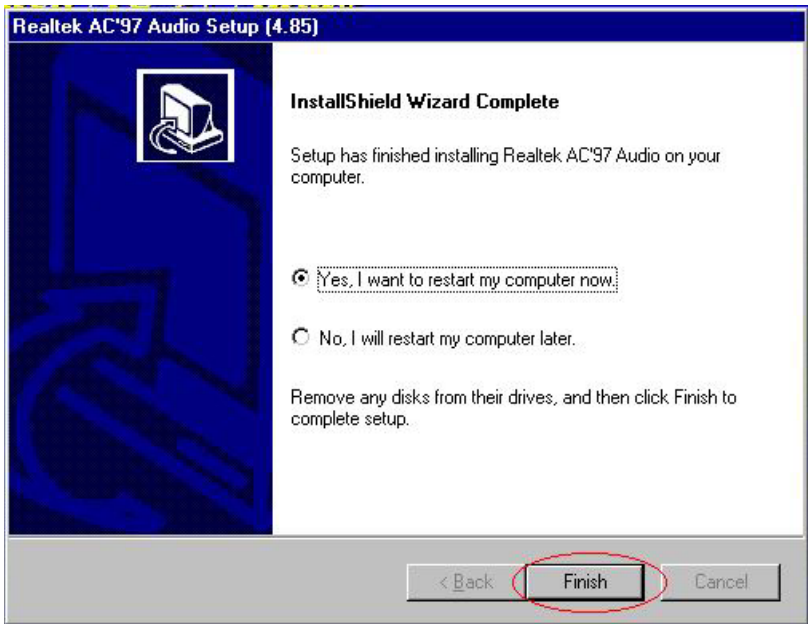
3. Select **Next** to continue.


Realtek AC'97 Audio Setup (4.85)
Setup Status
alcupd - v1.63
Realtek AC'97 Audio S
Installing:
C:\WINNT\Temp\new
80%
Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Realtek AC'97 Audio
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

Note: For Windows 2K. If you receive this warning message, please click **Yes** to continue.

Realtek
Setup
Hardware Installation
The software you are installing for this hardware:
Realtek AC'97 Audio
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation
InstallShield
Cancel

Note: For XP If you receive this warning message, please click Continue Anyway.

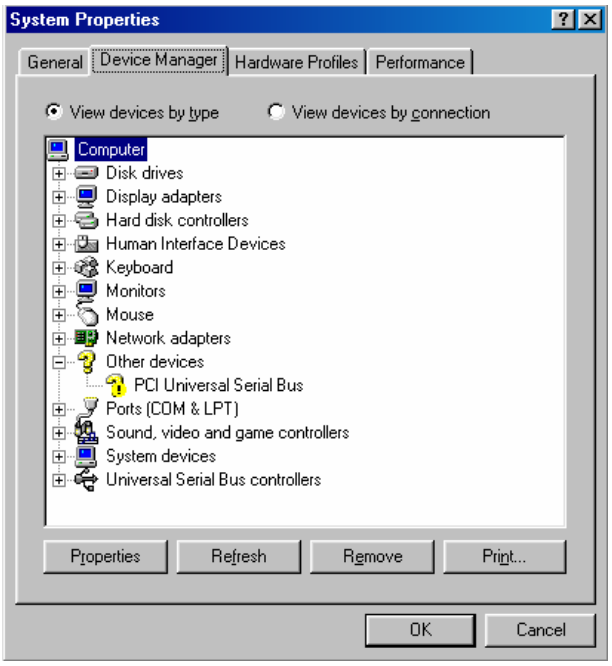

Realtek AC'97 Audio Setup (4.85)
InstallShield Wizard Complete
Setup has finished installing Realtek AC'97 Audio on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

4. Click **Finish** and restart the system.

USB Driver Installation

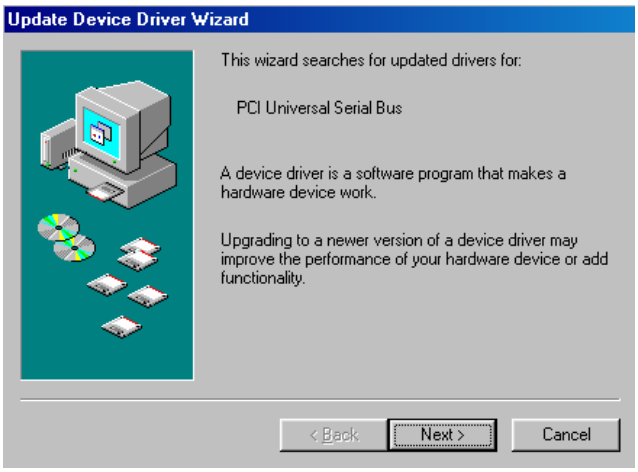
USB 2.0 Installation for Windows 98 & ME

1. Open Device Manger in the System Properties.
   Select **PCI Universal Serial Bus**

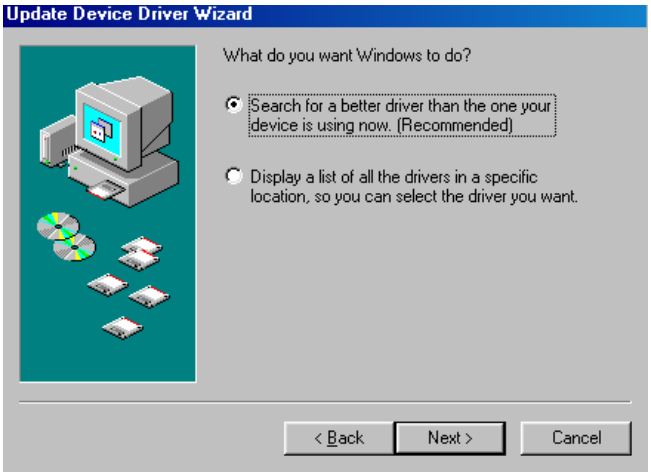


Click **Properties**

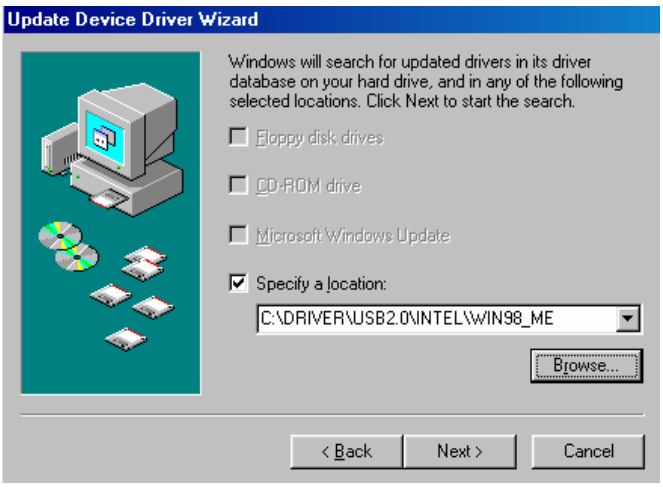
2. Click **Reinstall Driver**


Update Device Driver Wizard
This wizard searches for updated drivers for:
PCI Universal Serial Bus
A device driver is a software program that makes a hardware device work.
Upgrading to a newer version of a device driver may improve the performance of your hardware device or add functionality.
< Back
Next >
Cancel

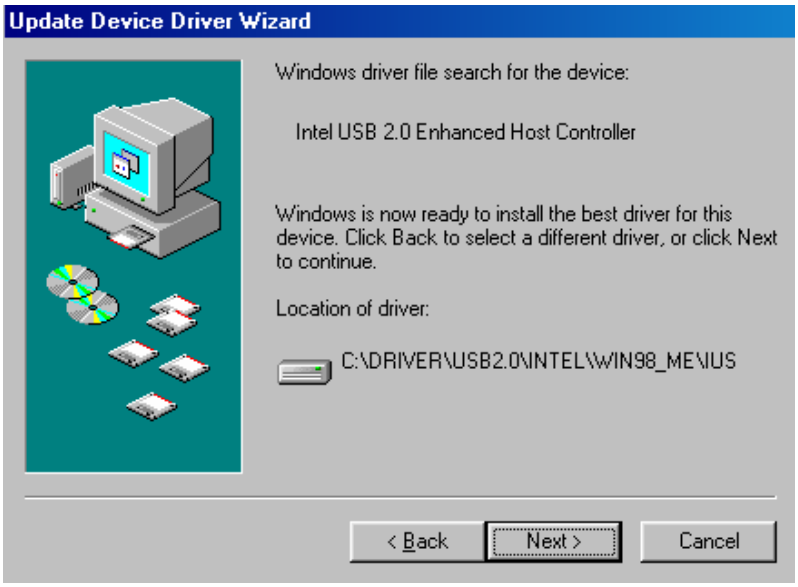
3. Click **Next**


Update Device Driver Wizard
What do you want Windows to do?
Search for a better driver than the one your device is using now. (Recommended)
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

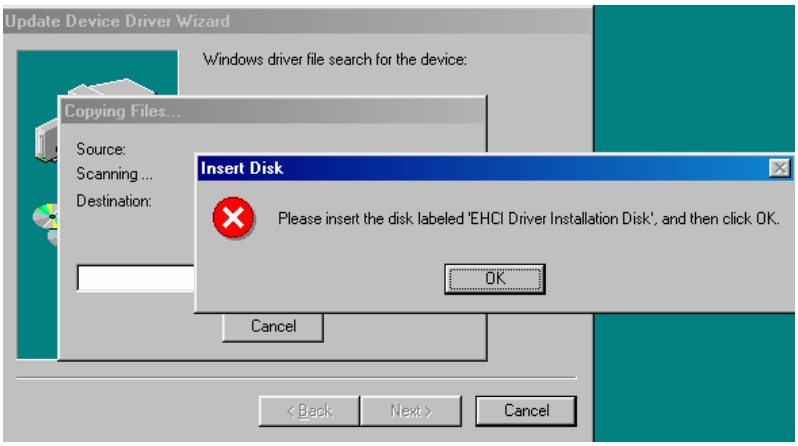
4. Select Search a better driver than the one your device is using now. [Recommended]
Click **Next**


Update Device Driver Wizard
Windows will search for updated drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
C:\DRIVER\USB2.0\INTEL\WIN98_ME
Browse...
< Back
Next >
Cancel

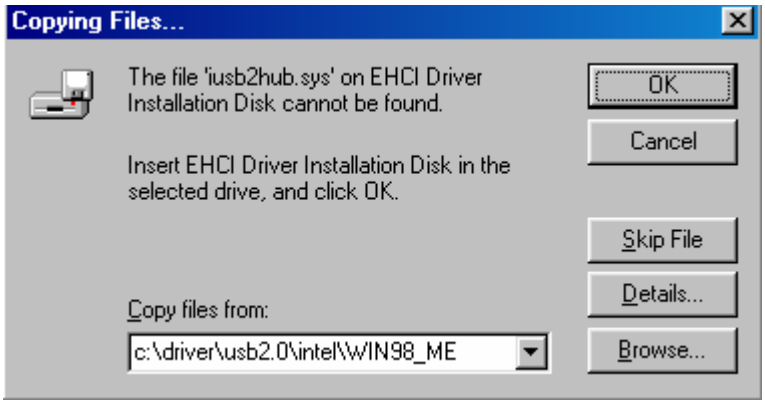
5. Select Specify a location, click path “C:\ULV600.DVR\USB2.0\INTEL\WIN98_ME”
Click **Next**


Update Device Driver Wizard
Windows driver file search for the device:
Intel USB 2.0 Enhanced Host Controller
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
C:\DRIVER\USB2.0\INTEL\WIN98_ME\IUS
< Back
Next >
Cancel

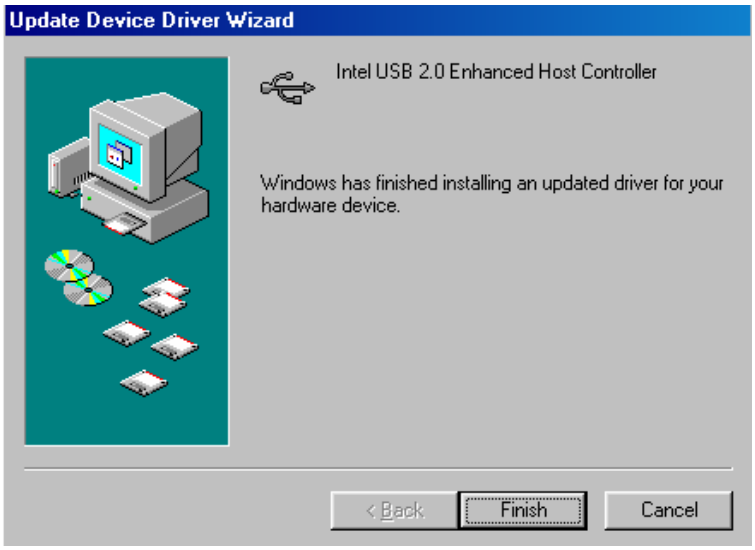
6. Click **Next**



7. Click **OK**



8. click path “C:\ULV600.DVR\USB2.0\INTEL\WIN98_ME”
Click **OK**


Update Device Driver Wizard
Intel USB 2.0 Enhanced Host Controller
Windows has finished installing an updated driver for your hardware device.
< Back
Finish
Cancel

9. Click **Finish**

USB 2.0 Installation for Windows 2000 and XP

For Windows 2000, SP4 must be installed for USB 2.0 support.

For Windows XP, SP1 or SP2 must be installed for USB 2.0 support.

Note, with lower version service packs only USB 1.1 is supported. This will be indicated in the device manager as an exclamation icon (!) beside the USB device.

Following service pack upgrade, it is NOT necessary to install the Intel USB 2.0 driver.

ELO Touch Tools Installation

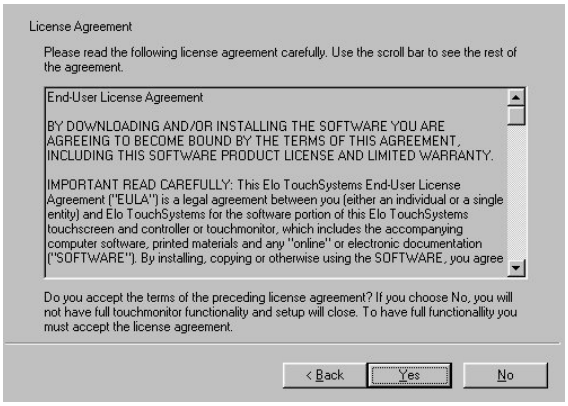
ELO Touch Tools Installation for Windows 98

1. Insert the Utility CD and locate the touch screen folder **"D:\Utility\TOUCHSCREEN\ELO Touch\ELO *Win 9X_me*".**

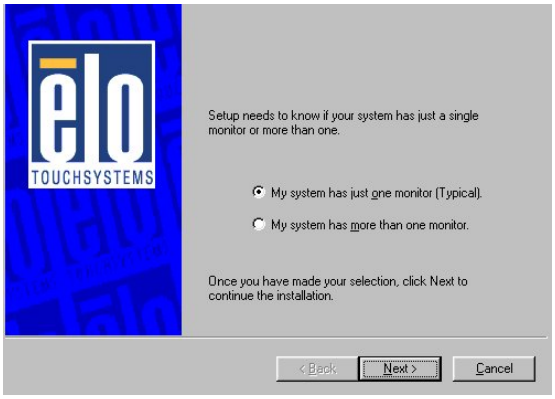
2. Run **Setup.exe**

Welcome to Elo's MonitorMouse for Windows 95/98 Setup.
This program will install the Elo touchmonitor driver on your computer. This driver supports the connection of up to four touchmonitors on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
TOUCHSYSTEMS
< Back
Next >
Cancel

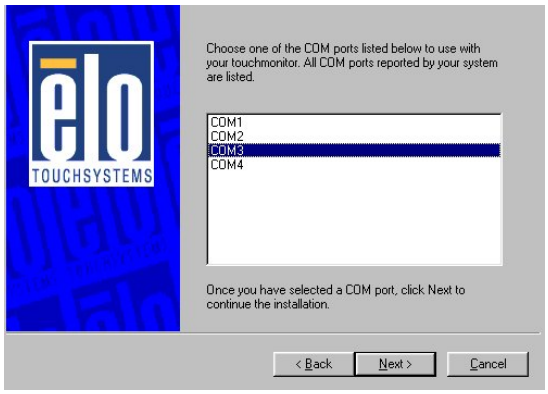
3. Click **Next**.


License Agreement
Please read the following license agreement carefully. Use the scroll bar to see the rest of the agreement.
End-User License Agreement
BY DOWNLOADING AND/OR INSTALLING THE SOFTWARE YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT, INCLUDING THIS SOFTWARE PRODUCT LICENSE AND LIMITED WARRANTY.
IMPORTANT READ CAREFULLY: This Elo TouchSystems End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Elo TouchSystems for the software portion of this Elo TouchSystems touchscreen and controller or touchmonitor, which includes the accompanying computer software, printed materials and any "online" or electronic documentation ("SOFTWARE"). By installing, copying or otherwise using the SOFTWARE, you agree
Do you accept the terms of the preceding license agreement? If you choose No, you will not have full touchmonitor functionality and setup will close. To have full functionallity you must accept the license agreement.
< Back
Yes
No

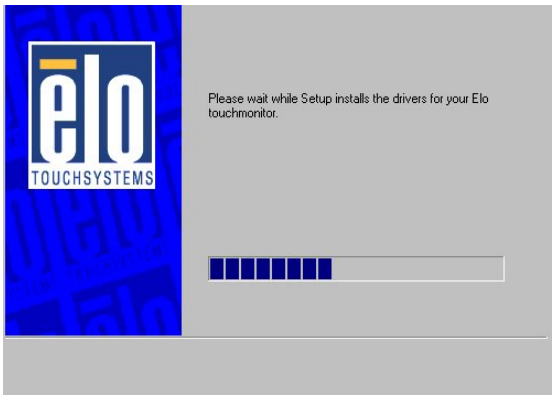
4. Read the ***"License Agreement"*** and click **Yes** if you accept it.


Setup needs to know if your system has just a single monitor or more than one.
TOUCHSYSTEMS
My system has just one monitor (Typical).
My system has more than one monitor.
Once you have made your selection, click Next to continue the installation.
< Back
Next >
Cancel

5. Select if you have one or two monitors and click **Next**.


Choose one of the COM ports listed below to use with your touchmonitor. All COM ports reported by your system are listed.
COM1
COM2
COM3
COM4
Once you have selected a COM port, click Next to continue the installation.
< Back
Next >
Cancel

6. Select the COM port for the monitor. It is recommended that you select **COM3** for primary touch screen and COM4 for second touch screen. Then click **Next**.



7. Wait until the ELO Touch Tools have been installed.

Setup Complete.
Setup has finished installing the Elo touchmonitor driver.
You can choose to view the Elo Touchscreen control panel to customize touchscreen settings after setup finishes.
View Elo Touchscreen control panel.
Click Finish to exit Setup.
< Back
Finish

8. Select View ELO touch screen control panel and click **Finish**.

10. Click Yes to restart the system.

11. After the system finishes rebooting follow the directions to calibrate ELO Touch Tools.

ELO Touch Tools Installation for Windows 2000 and Windows XP

1. Locate **D:\Utility\TOUCHSCREEN\ELO Touch**

2. Select the relevant ELO folder for the operating system that you are using.

Example. If you are installing for a Windows 2000 or XP then select **Elo Touch 2K_XP**

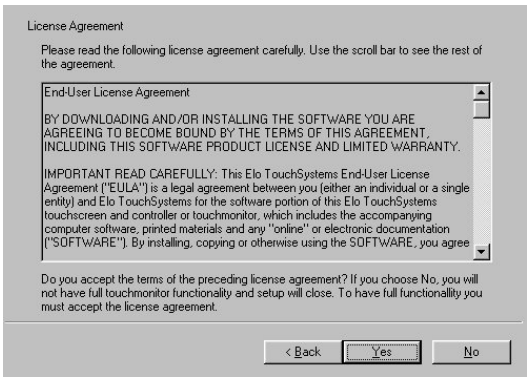
3. Run **Setup.exe**

Welcome to Elo's MonitorMouse for Windows 95/98 Setup.
This program will install the Elo touchmonitor driver on your computer. This driver supports the connection of up to four touchmonitors on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
TOUCHSYSTEMS
< Back
Next >
Cancel

4. Click **Next**

Elo Touchscreen Setup
Welcome to Elo Touchscreen Setup.
This program will install the Elo USB and Serial touchscreen drivers on your computer. It is strongly recomended that you exit all Windows programs before running this Setup program.
Install Serial Touchscreen Drivers
Install USB Touchscreen Drivers
TOUCHSYSTEMS
< Back
Next >
Cancel

5. Check “Install serial Touch screen Drivers.” And Click **Next**.


License Agreement
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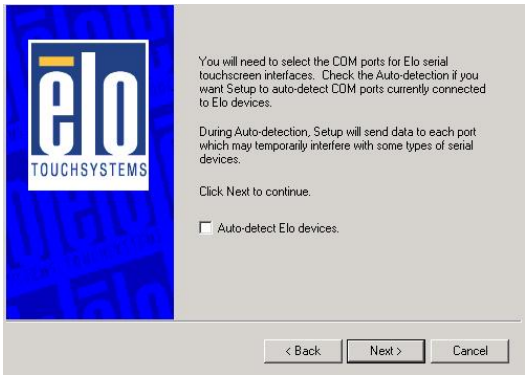
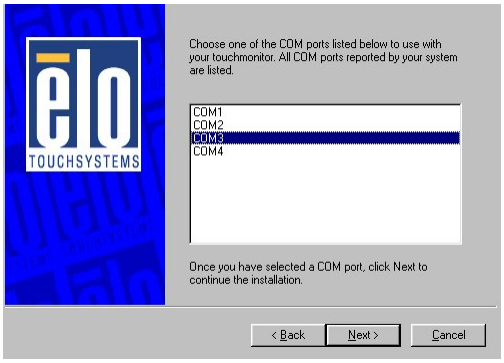
BY DOWNLOADING AND/OR INSTALLING THE SOFTWARE YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT, INCLUDING THIS SOFTWARE PRODUCT LICENSE AND LIMITED WARRANTY.
IMPORTANT READ CAREFULLY: This Elo TouchSystems End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Elo TouchSystems for the software portion of this Elo TouchSystems touchscreen and controller or touchmonitor, which includes the accompanying computer software, printed materials and any "online" or electronic documentation ("SOFTWARE"). By installing, copying or otherwise using the SOFTWARE, you agree
Do you accept the terms of the preceding license agreement? If you choose No, you will not have full touchmonitor functionality and setup will close. To have full functionallity you must accept the license agreement.
< Back
Yes
No

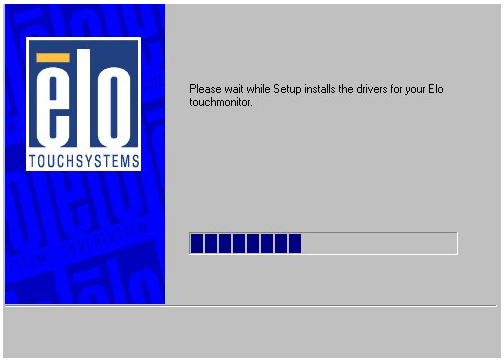
6. Read the ***“License Agreement”*** and click **Yes** if you accept it.


You will need to select the COM ports for Elo serial touchscreen interfaces. Check the Auto-detection if you want Setup to auto-detect COM ports currently connected to Elo devices.
During Auto-detection, Setup will send data to each port which may temporarily interfere with some types of serial devices.
Click Next to continue.
Auto-detect Elo devices.
< Back
Next >
Cancel

7. Select “Auto-detect Elo devices.” and click **Next.**


Choose one of the COM ports listed below to use with your touchmonitor. All COM ports reported by your system are listed.
COM1
COM2
COM3
COM4
Once you have selected a COM port, click Next to continue the installation.
< Back
Next >
Cancel

8. Select the COM port for the touch monitor. It is recommended that you select COM3 for the touch screen, as this port is internally configured for touch operation.

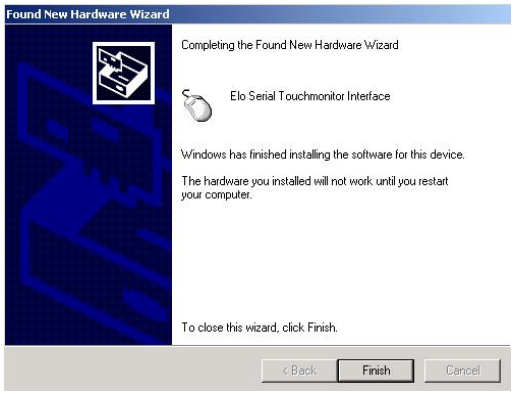


9. Wait until the ELO Touch Tools have been installed.

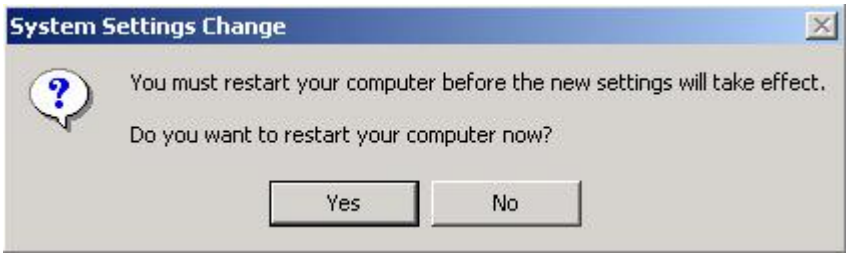
Setup Complete.
Setup has finished installing the Elo touchmonitor driver.
You can choose to view the Elo Touchscreen control panel to customize touchscreen settings after setup finishes.
View Elo Touchscreen control panel.
Click Finish to exit Setup.
< Back
Finish

10. Select View ELO touch screen control panel and click **Finish**.

IT MAY BE NECESSARY TO RESTART YOUR COMPUTER TO UTILIZE YOUR TOUCHSCREEN FEATURES.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
Elo Serial Touchmonitor Interface
Windows has finished installing the software for this device.
The hardware you installed will not work until you restart your computer.
To close this wizard, click Finish.
< Back
Finish
Cancel

11. Click NEXT while this window appears after system finishs rebooting.


System Settings Change
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

12. Click YES to restart your computer again.

After the system finishes rebooting follow the directions to calibrate ELO Touch Tools.

ELO Control Panel

This section explains the different options in the ELO control Panel.

General tab

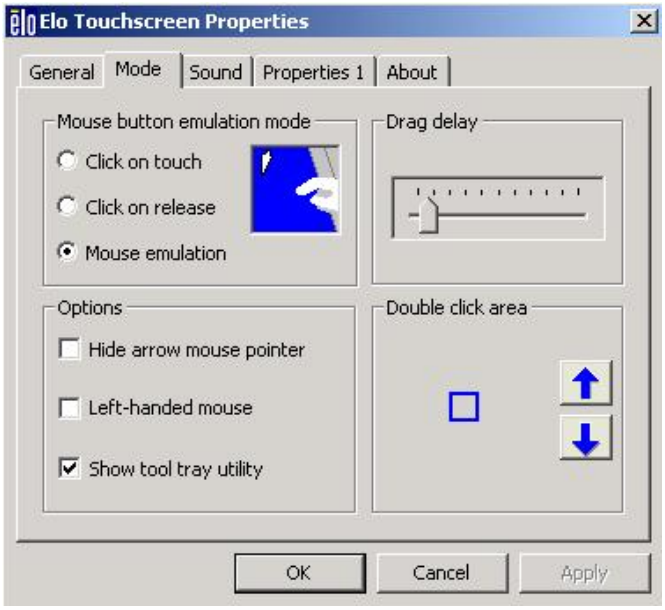
The general tab allows you to:

- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the **Align** button.

Mode tab

The Buttons tab allows you to:

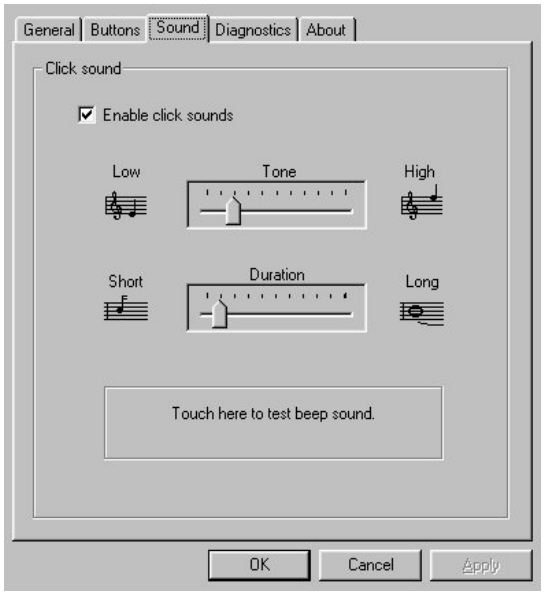
- Adjust all mouse emulation controls.
- Change cursor properties
- Enable or disable right mouse button utility.



Sound tab

The Sound tab allows you to:

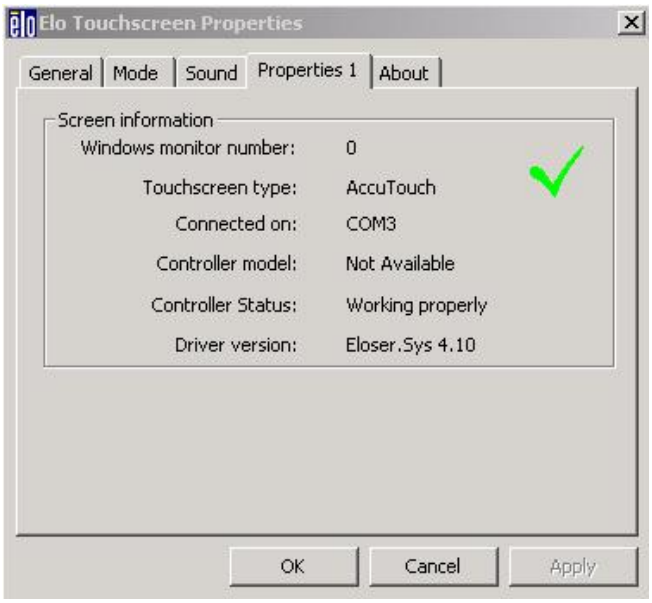
- To change sound properties for ELO touch tools.



Properties tab

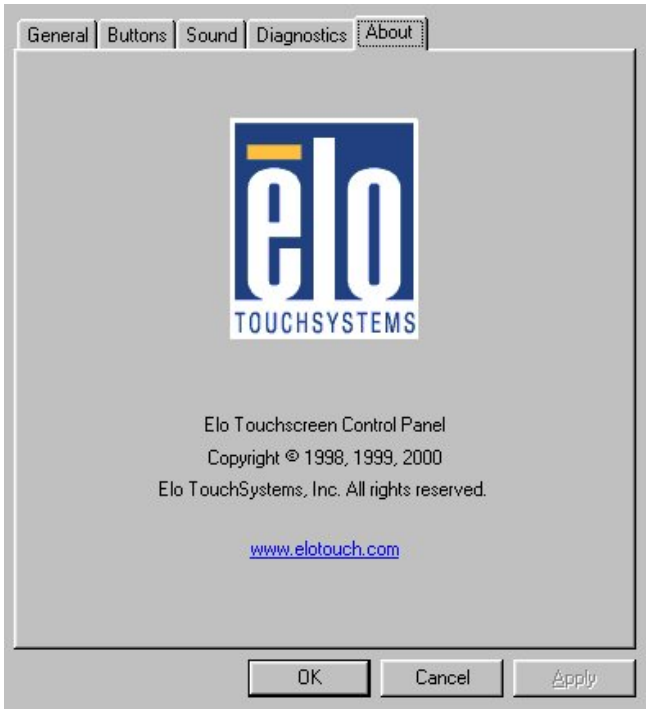
The Diagnostics tab allows you to:

- View Controller Information.



About tab

The About tab displays Information about ELO Touch systems



TouchKit Tools Installation

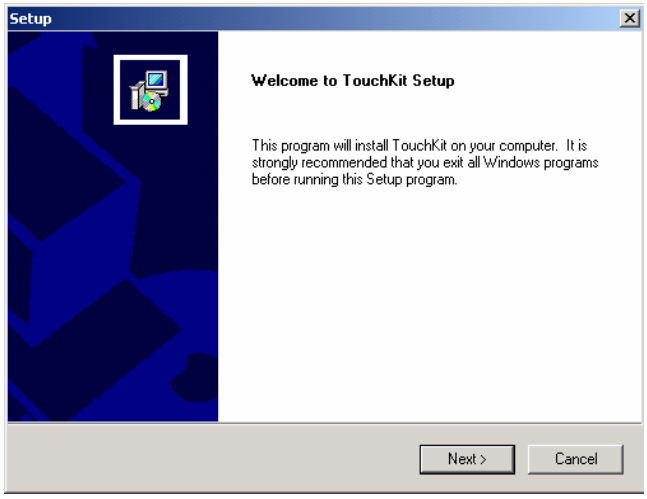
TouchKit Tools Installation for all Windows Operating Systems

1. Locate **D:\Utility\TOUCHSCREEN\TouchKit\Driver**

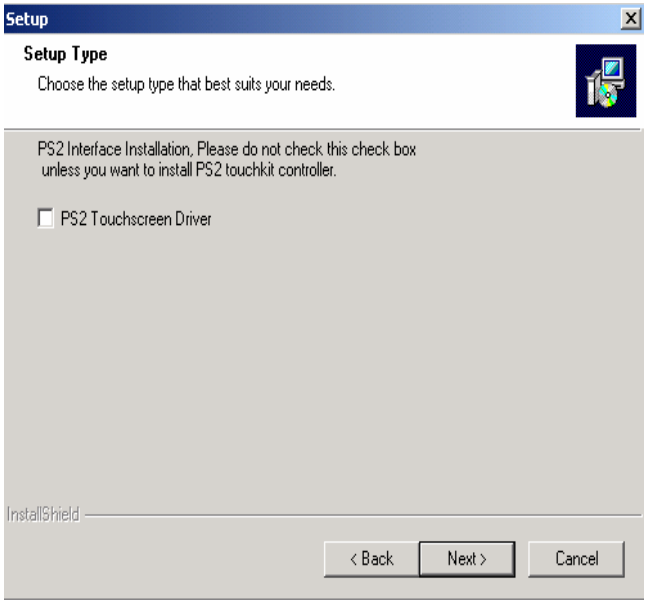
2. Select the relevant eGalax folder for the operating system that you are using.

Example. If you are installing for a Windows 98 system, then select **Win9x_Me**. If you are installing under Windows 2000 or XP then select **Win2000_XP**

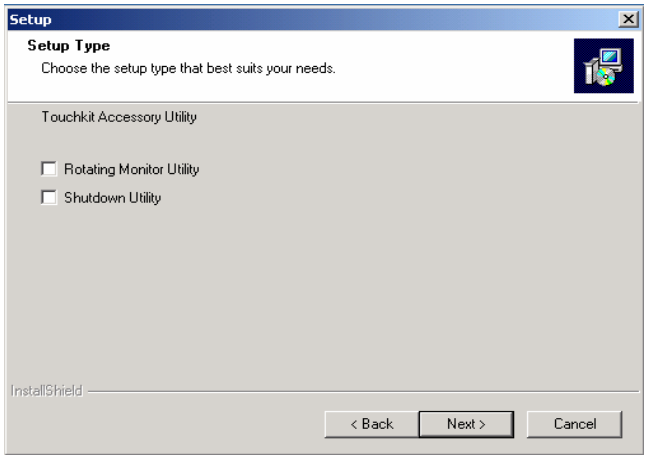
3. Run **Setup.exe**


Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

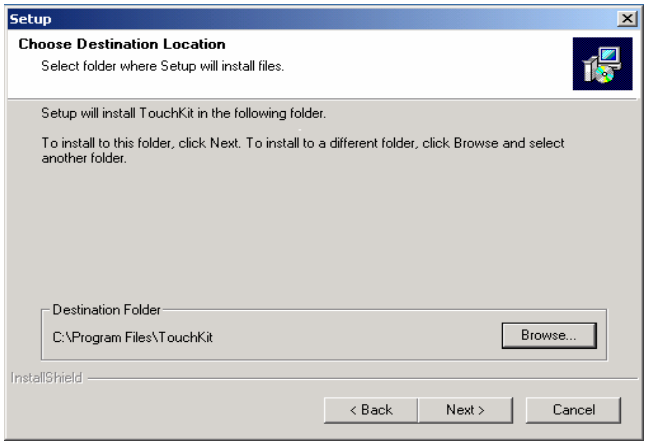
4. Click **Next**


Setup
Setup Type
Choose the setup type that best suits your needs.
PS2 Interface Installation, Please do not check this check box unless you want to install PS2 touchkit controller.
PS2 Touchscreen Driver
InstallShield
< Back
Next >
Cancel

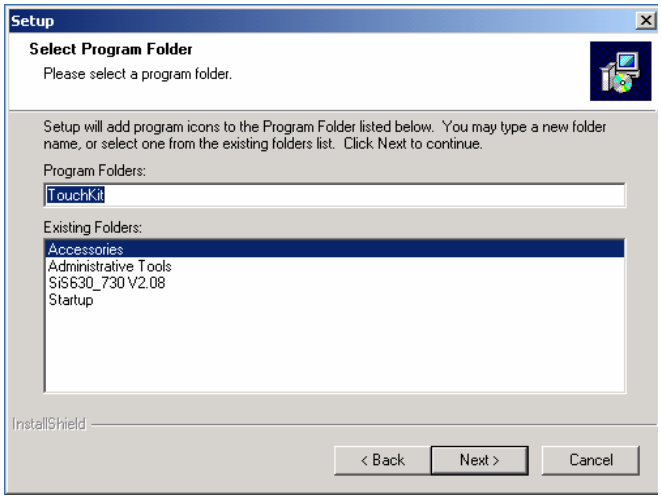
5. Click **Next**



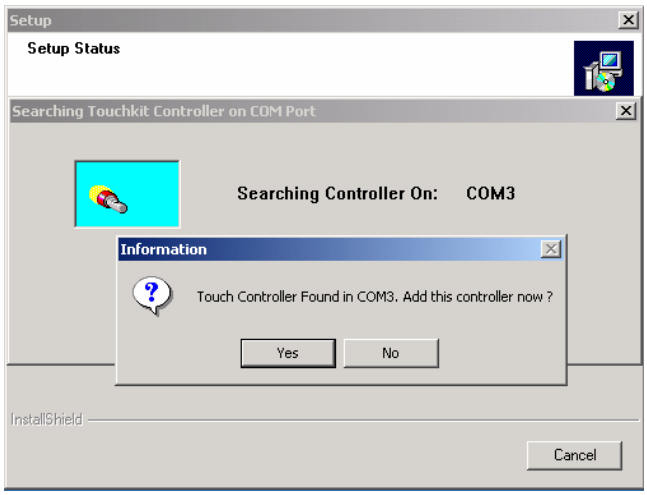
6. Click **Next**


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

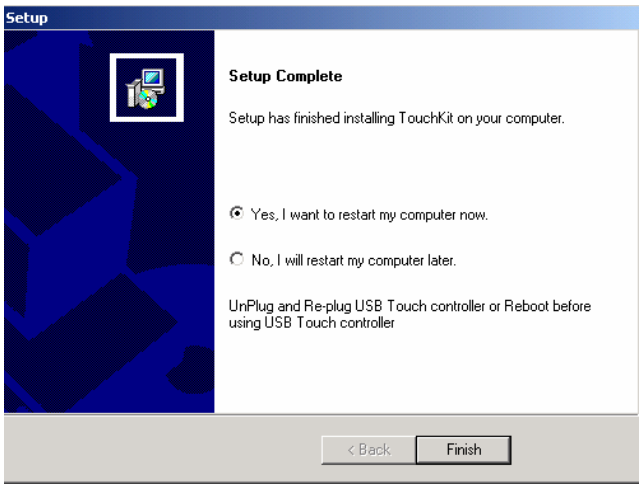
7. Click **Next**


Setup
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folders:
TouchKit
Existing Folders:
Accessories
Administrative Tools
SiS630_730 V2.08
Startup
InstallShield
< Back
Next >
Cancel

8. Click **Next**



9. Click **Yes**


Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
UnPlug and Re-plug USB Touch controller or Reboot before using USB Touch controller
< Back
Finish

10. Click **Finish to restart your computer again.**

After the system finishes rebooting follow the directions to calibrate the Touch screen.

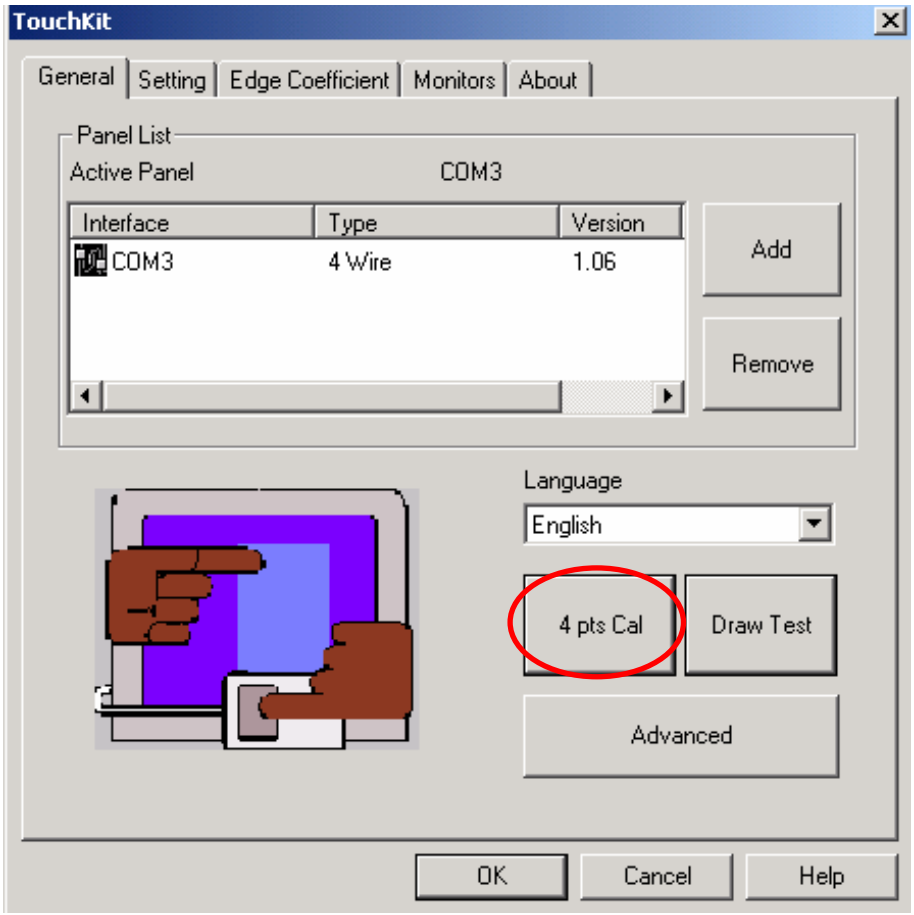
TouchKit Control Panel

This section explains the different options in the TouchKit control Panel.

General tab

The general tab allows you to:

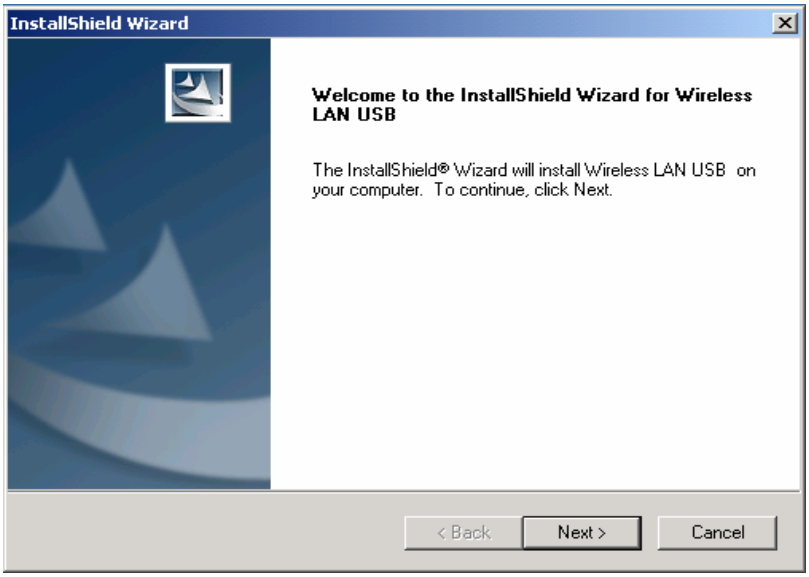
- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the **4 pts Cal** button.



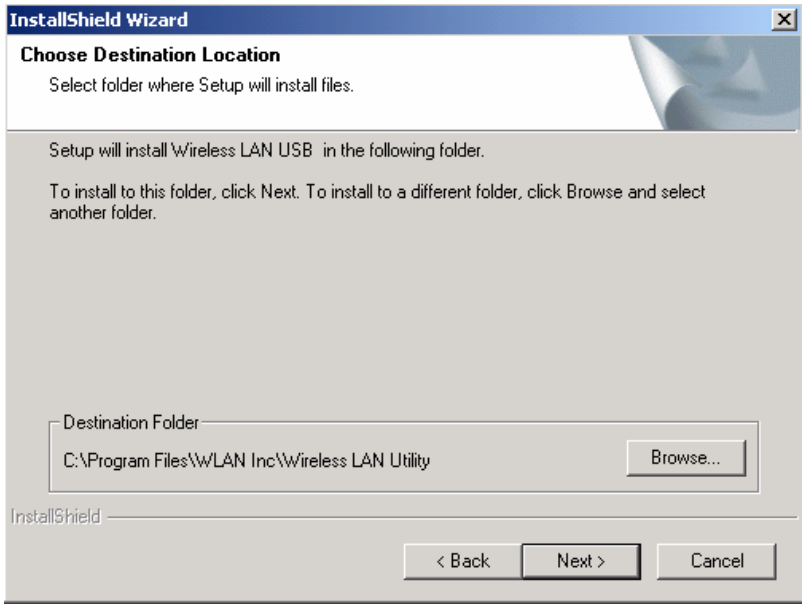
Wireless LAN Driver Installation

Wireless LAN Driver Installation for all Windows Operating Systems (Optional)

1. Open **D:\Utility\Wireless LAN\802.11b folder**
2. Run **Setup.EXE**


InstallShield Wizard
Welcome to the InstallShield Wizard for Wireless LAN USB
The InstallShield® Wizard will install Wireless LAN USB on your computer. To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Wireless LAN USB in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\WLAN Inc\Wireless LAN Utility
Browse...
InstallShield
< Back
Next >
Cancel

4. Click **Next**

Chapter 4

Specifications

RichPOS-2000 (W/O Capture card) Specifications

System Configuration	
CPU (BGA 478)	INTEL® Ultra Low Voltage Celeron-M 600MHz (L2:0KB)
Chipset	INTEL® 852GM (GMCH).
Real-time clock	INTEL 82801DB (ICH4)
Super I/O	Winbond 83627HF
DRAM	One 200-pin SODIMM socket supports 200/266/333 DDR SDRAM. To the maximum of 1GB
VGA controller	On-chip 852GM built-in AGP2.0 4X 3D graphics engine. Shares system DDR SDRAM, 32MB(max). Supports 18bit/24bit single pixel or 36bit/48bit dual pixel color LVDS TFT LCD panel.
Primary LCD Panel	8.4” or 14.1” TFT LCD Panel (800X600/1024x768).
Primary Touch Panel	8.4” ELO 4-wire or 14.1” ELO 5-wire resistive touch panel.
Compact Flash Disk socket	Type I/II Compact Flash™ Disk. The Flash Disk provides 100% compatibility with (IDE2) hard disk.
HDD	Internal 3.5” 40GB hard disk drive (or above).
Power	100 watt external power adapter. (12V / 8.33A)

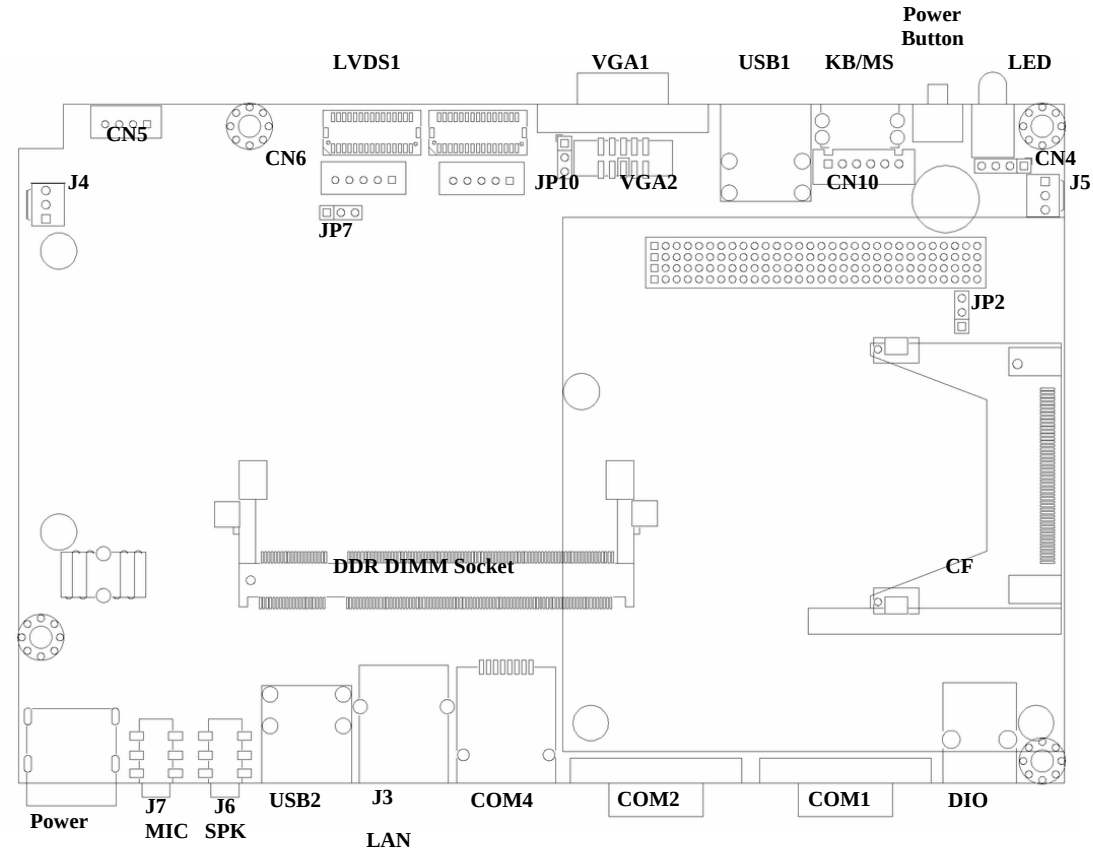
I/O Port	
Serial Port	4 User available COM ports (COM1 & COM2 &COM5&COM6). 2 System assigned COM ports (COM3 & COM4). ➢ COM3 for primary touch screen. ➢ COM4 for secondary touch screen or customer character display.
Parallel Port	One Bi-directional Parallel Port, supports ECP/EPP (IEEE1284).
USB port	6 USB 2.0 ports (2*Internal, 4*External)
Cash drawer port	RJ11 Single/Dual Cash drawer port ,12V actuation. Controlled through I/O port 280H
Keyboard Port	One PS/2 keyboard port.
LAN Port	10/100Mbps Ethernet Controller, Realtek RTL8100BL.
VGA Port	Standard VGA Port for second LCD panel.
Audio Port	Integrated Sound Blaster compatible, AC97 Audio Codec. (Realtek ALC202A)
Optional Features	
Customer display	Integrated VFD/LCD customer display.
Program keyboard with MCR	Integrated 60Key Keyboard with Single／Dual／Triple Track MCR.
FDD	External USB Floppy disk drive.
CD-ROM	External USB CD-ROM drive.
Power Consumption	
Power consumption	40W Idle (Standard system with secondary LCD panel while accessing HDD).
Operating temperature	
Operating temperature	0 ℃ ~ 35 ℃

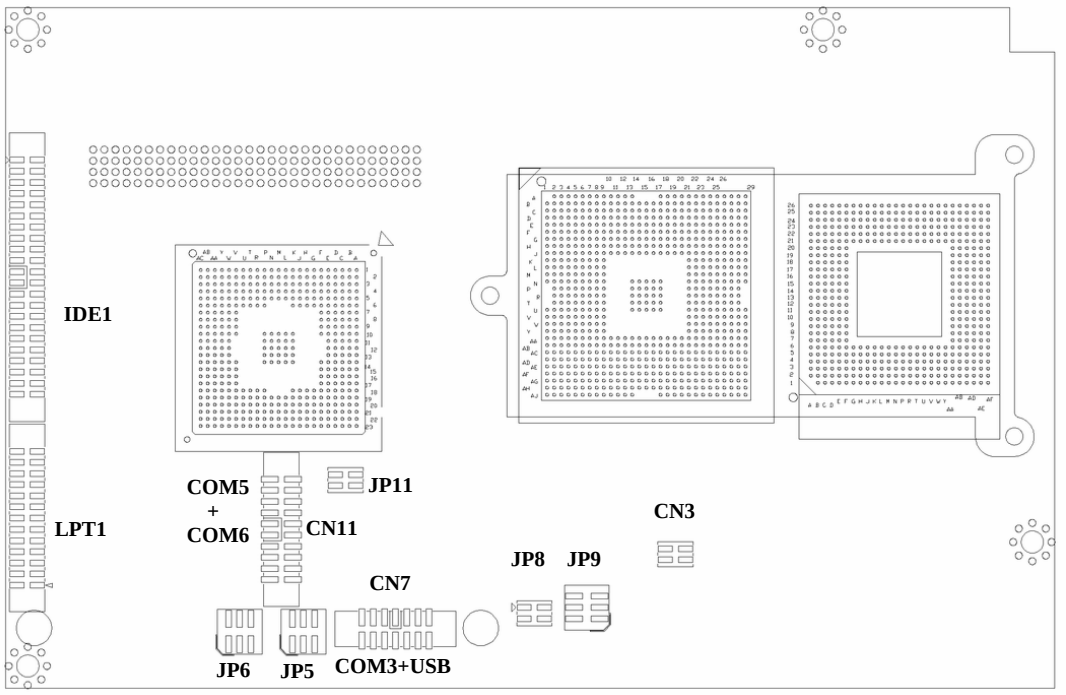
RichPOS-2000 (W/Capture card) Specifications

System Configuration	
CPU (BGA 478)	INTEL® Ultra Low Voltage Celeron-M 600MHz (L2:0KB)
Chipset	INTEL® 852GM (GMCH).
Real-time clock	INTEL 82801DB (ICH4)
Super I/O	Winbond 83627HF
DRAM	One 200-pin SODIMM socket supports 200/266/333 DDR SDRAM. To the maximum of 1GB
VGA controller	On-chip 852GM built-in AGP2.0 4X 3D graphics engine. Shares system DDR SDRAM, 32MB(max). Supports 18bit/24bit single pixel or 36bit/48bit dual pixel color LVDS TFT LCD panel.
Primary LCD Panel	8.4” or 14.1” TFT LCD Panel (800X600/1024x768).
Primary Touch Panel	8.4” ELO 4-wire or 14.1” ELO 5-wire resistive touch panel.
Compact Flash Disk socket	Type I/II Compact Flash™ Disk. The Flash Disk provides 100% compatibility with (IDE2) hard disk.
HDD	Internal 3.5” 40GB hard disk drive (or above).
Power	100 watt external power adapter. (12V / 8.33A)
I/O Port	
Serial Port	2 User available COM ports (COM1 & COM2). 2 System assigned COM ports (COM3 & COM4). ➢ COM3 for primary touch screen. ➢ COM4 for secondary touch screen or customer character display.
Parallel Port	One Bi-directional Parallel Port, supports ECP/EPP (IEEE1284).
USB port	6 USB 2.0 ports (2*Internal, 4*External)
Cash drawer port	RJ11 Single/Dual Cash drawer port ,12V actuation. Controlled through I/O port 280H
Keyboard Port	One PS/2 keyboard port.

LAN Port	10/100Mbps Ethernet Controller, Realtek RTL8100BL.
VGA Port	Standard VGA Port for second LCD panel.
Audio Port	Integrated Sound Blaster compatible, AC97 Audio Codec. (Realtek ALC202A)
Capture Card	4Ch. BNC Composite Video, NTSC/PAL/SECAM auto sensing
Optional Features	
Customer display	Integrated VFD/LCD customer display.
Program keyboard with MCR	Integrated 60Key Keyboard with Single／Dual／Triple Track MCR.
FDD	External USB Floppy disk drive.
CD-ROM	External USB CD-ROM drive.
Power Consumption	
Power consumption	50W Idle (Standard system with secondary LCD panel while accessing HDD).
Operating temperature	
Operating temperature	0 ℃ ~ 35 ℃

MainBoard Configuration





This chapter describes how to connect peripherals, switches and indicators to the FIR-ULV600-DVR board.

Label	Function
LVDS1	LVDS LCD Panel connector
VGA1 & 2	VGA connector
LAN	LAN RJ45 connector
USB1	USB dual port connector
USB2	USB dual port connector
COM1	Serial port connectors
COM2	Serial port connectors
COM4	Serial port connectors
KB_MS1	Keyboard & Mouse connector
J4 & J5	Fan connectors
J6 & CN3	Speaker out connector
J7	MIC in connector
LPT1	Parallel port connector
IDE1	Ultra ATA100 Primary IDE connectors
CF1	Compact Flash Storage Card Type II connector
PS_ON1	Power on Switch
LED1	Power LED
CN1	PC/104 Plus connector
CN2	Digital I/O connector
CN4	External switches and indicators
CN5	Power output connector
CN6	LVDS back light connector
CN7	Multi-function connector
CN8	+12V DC power connector
CN10	Internal Keyboard connector
CN11	Serial port connectors (COM5 & COM6)

JP2 ***Clear CMOS Setup***

JP1	Description
Short 1-2 (default)*	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

JP7 ***TFT LCD Voltage (5V / 3V) Setting***

JP3	Description
Short 1–2	3V TFT LCD
Short 2–3	5V TFT LCD

JP8 ***COM4 Voltage Selection***

JP4	Description
Short 1-2	+12V
Short 2-4	+5V

JP9 ***COM4 Mode Selection for VFD (factory default setting)***

JP5	Description
Short 1-2	Short CTS-RTS
Short 3-5	+12/+5V output
Short 4-6	Ground output

COM4 Mode Selection for RS-232 device

JP5	Description
Short 1-3	CTS
Short 2-4	RTS

JP5 ***COM2 RI Function Setting***

JP6	Description
Short 1-2	RI is +5Volt output
Short 3-4	RI function
Short 5-6	RI is +12 Volt output

JP6 ***COM1 RI Function Setting***

JP7	Description
Short 1-2	RI is +5 Volt output
Short 3-4	RI function
Short 5-6	RI is +12 Volt output

JP11 ***COM5 & COM6 RI Function Setting***

PIN	Description
Short 1-2	RI is +12 Voltage output
Short 3-4	RI is +5 Voltage output

LVDS1 ***LVDS Function Setting***

PIN No.	Description	PIN No.	Description
1	GROUND	2	GROUND
3	CH1 DATA3+	4	CH1 DATA3-
5	CH1 CLK+	6	CH1 CLK-
7	CH1 DATA2+	8	CH1 DATA2-
9	CH1 DATA1+	10	CH1 DATA1-
11	CH1 DATA0+	12	CH1 DATA0-
13	GROUND	14	GROUND
15	CH2 DATA3+	16	CH2 DATA3-
17	CH2 CLK+	18	CH2 CLK-
19	CH2 DATA2+	20	CH2 DATA2-
21	CH2 DATA1+	22	CH2 DATA1-
23	CH2 DATA0+	24	CH2 DATA0-
25	GROUND	26	GROUND
27	LCD power	28	LCD power
29	LCD power	30	LCD power

VGA1 ***15 Pin Female Connector***

PIN	Description	PIN	Description
1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	VCC / NC	10	GROUND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

VGA2 ***10 Pin Box Header Connector***

PIN	Description	PIN	Description
1	RED	6	DDCCLK
2	GREEN	7	DDCDAT
3	BLUE	8	GROUND
4	HSYNC	9	GROUND
5	VSYNC	10	GROUND

LAN1 ***RJ45 Connectors (10 / 100M)***

PIN	Description	PIN	Description
1	TX+	7	N/C
2	TX-	8	N/C
3	RX+	9	Speed +
4	N/C	10	Speed -
5	N/C	11	Active/LINK +
6	RX-	12	Active/LINK -

USB1 & USB2 ***2 Ports USB Connect (USB 2.0)***

PIN	Description	PIN	Description
1	VCC	5	VCC
2	DATA0-	6	DATA1-
3	DATA0+	7	DATA1+
4	GROUND	8	GROUND

COM1 ***D-SUB Serial Port Connector***

PIN	Description	PIN	Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GROUND		

COM2 ***D-SUB Serial Port Connector***

PIN	Description	PIN	Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GROUND		

COM4 ***RJ-45 Serial Port Connector***

PIN	Description	PIN	Description
1	+12/+5V	2	+12/+5V or CTS
3	GROUND	4	GROUND or RTS
5	DTR	6	DSR
7	TXD	8	RXD

COM5 & COM6 ***Serial Port Box Header Connector***

PIN	Description	PIN	Description
1	(DCD5)	2	(DSR5)
3	(RXD5)	4	(RTS5)
5	(TXD5)	6	(CTS5)
7	(DTR5)	8	(RI5)
9	GROUND5	10	GROUND5
11	(DCD6)	12	(DSR6)
13	(RXD6)	14	(RTS6)
15	(TXD6)	16	(CTS6)
17	(DTR6)	18	(RI6)
19	GROUND6	20	GROUND6

KB_MS1 ***Mini DIN Keyboard / Mouse Connector***

PIN	Description
1	KEYBOARD DATA
2	MOUSE DATA
3	GROUND
4	+5V
5	KEYBOARD CLOCK
6	MOUSE CLOCK

J4 & J5 ***CPU FAN & Case FAN Connector***

PIN	Description
1	Rotation Signa
2	+12V
3	l Ground

J6 ***Speaker out Connector***

PIN	Description	PIN	Description
1	NC	2	GROUND
3-5	Line Out (Left)	4-6	Speaker Out (Right)

J7 ***Microphone in Connector***

PIN	Description	PIN	Description
1	NC	2	GROUND
3-5	MIC In	4-6	NC

IDE1 ***IDE Interface connector***

PIN	Description	PIN	Description
1	RESET#	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N/C
21	DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	CHRDY	28	REV. PULL LOW
29	DACK	30	GROUND
31	INTERRUPT	32	N/C
33	SA1	34	PD66 SELECT
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	+5V	42	+5V
43	GND	44	N/C

LPT1 ***LPT1 Box Header connector***

PIN	Description	PIN	Description
1	STROBE#	14	AUTO FORM FEED #
2	DATA 0	15	ERROR#
3	DATA 1	16	INITIALIZE
4	DATA 2	17	PRINTER SELECT IN#
5	DATA 3	18	GROUND
6	DATA 4	19	GROUND
7	DATA 5	20	GROUND
8	DATA 6	21	GROUND
9	DATA 7	22	GROUND
10	ACKNOWLEDGE	23	GROUND
11	BUSY	24	GROUND
12	PAPER EMPTY	25	GROUND
13	PRINTER SELECT	26	NC

CF1 ***Compact Flash Storage Card Socket pin assignment***

PIN	Description	PIN	Description
1	GROUND	26	PULL DOWN
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CS1#	32	CS3#
8	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	VCC
12	N/C	37	IRQ15
13	VCC	38	VCC
14	N/C	39	MASTER/SLAVE
15	N/C	40	N/C
16	N/C	41	RESET#
17	N/C	42	IORDY
18	A2	43	DREQ
19	A1	44	DACK#
20	A0	45	ACTIVE#
21	D0	46	PDIAG#
22	D1	47	D8
23	D2	48	D9
24	N/C	49	D10
25	PULL DOWN	50	GROUND

CN2 ***DGI/O Connector***

PIN	Description	PIN	Description
1	GROUND	2	DGI/O OUT 0
3	DGI/O IN 0	4	+12V
5	DGI/O OUT 1	6	GROUND

CN3 ***Line out connector***

PIN	Description	PIN	Description
1	LINE Out (Left)	2	GROUND
3	LINE Out (Right)	4	GROUND

CN4 ***Power SW/ LED Connector***

PIN	Description	PIN	Description
1	LED ON +	2	LED OFF +
3	GROUND	4	PS ON

CN5 ***Connector***

PIN	Description	PIN	Description
1		2	
3		4	

CN6 ***LCD Back Light Connector***

PIN	Description	PIN	Description
1	+12V	2	+12V
3	GROUND	4	GROUND
5	Back Light enable		

CN7 ***Multi-function connector (USB 2.0 and COM3)***

PIN	Description	PIN	Description
1	+5V	2	+5V
3	USB- (USB2.0)	4	USB- (USB2.0)
5	USB+ (USB2.0)	6	USB+ (USB2.0)
7	GROUND	8	GROUND
9	DTR	10	CTS
11	RTS	12	TX
13	RX	14	DSR

CN8 ***+12V DC Power Connector***

PIN	Description	PIN	Description
1	+12V	2	GROUND
3	+12V	4	GROUND

CN10 ***6 Pin Keyboard Connector***

PIN	Description
1	+5V
2	KEYBOARD CLOCK
3	PC KB CLOCK

4	KEYBOARD DATA
5	PC KB DATA
6	GROUND

J2&J3

KB/MSR and W/IC Card Reader

J1	
1-3	Short
2-4	Short

USB2 Signal routing Jumper mode 1 (factory default setting)

USB2 go directory to CON3 SCSI II Connector reserved for USB wireless LAN

J2	
3-5	Short
4-6	Short

J3	
1-3	Short
2-4	Short

USB2 Signal routing Jumper mode 2

USB2 go via K/B with USB Hub (9000CB0770) and back to CON3 SCSI II Connector

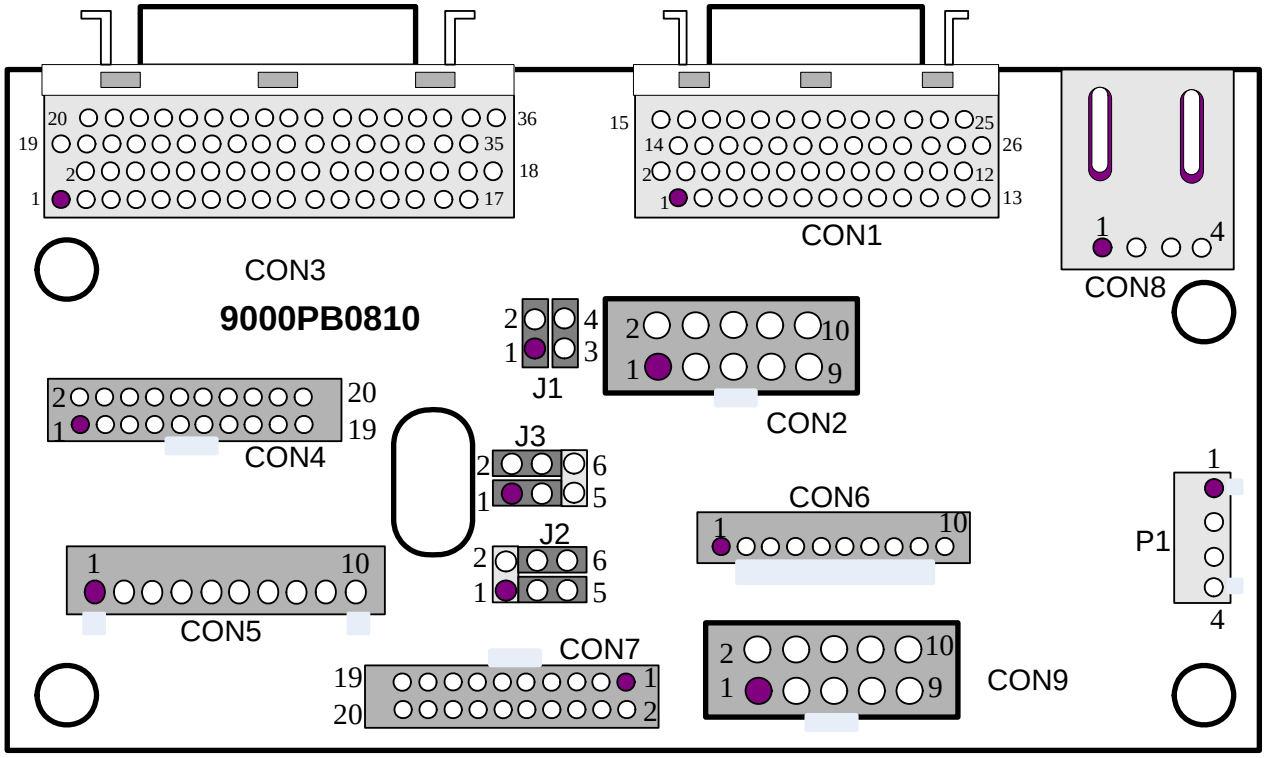
J2	
1-3	Short
2-4	Short

J3	
3-5	Short
4-6	Short

I/O board Configuration

The 9000CB0810 board carries the following signals to the main board. Including: LCD, inverter, COM3, Keyboard, VGA and USB port.

9000CB0810 I/O Board Pin Definition



CON1 ***26pin SCSI II connector for 2nd LCD Display***

PIN No.	Description	PIN No.	Description
1	RED	**14**	GND
2	+12V	**15**	GND
3	GREEN	**16**	GND
4	+12V	**17**	GND
5	BLUE	**18**	GND
6	+12V	**19**	GND
7	DDC DAT	**20**	GND
8	+12V	**21**	GND
9	HSYNC	**22**	GND
10	+12V	**23**	GND
11	VSYNC	**24**	GND
12	GND	**25**	GND
13	DDC CLK	**26**	GND

CON2 ***Connects to the main board VGA port VGA2***

PIN No.	Description	PIN No.	Description
1	REDC	**6**	GND
2	DDC DAT	**7**	HSYNC
3	GREENC	**8**	GND
4	DDC CLK	**9**	VSYNC
5	BLUEC	**10**	GND

CON3 ***36pin SCSI II connector for 1st 8.4", 14" LCD Display***

PIN	Description	PIN	Description
1	TX	19	DSR
2	RTS	20	RX
3	DM-3	21	Vcc
4	GND	22	DP-3
5	PVDD	23	PVDD
6	RX0-	24	RX0+
7	RX1-	25	RX1+
8	RX2-	26	RX2+
9	RX CLK-	27	RX CLK+
10	RX3-	28	RX3+
11	GND	29	GND
12	GND	30	Vcc
13	GND	31	GND
14	KB-CK	32	Vcc
15	KB-DA	33	PC-CK1
16	GND	34	PC-DA1
17	VIN	35	VIN
18	GND	36	ON/OFF

CON4 ***LCD LVDS signal connector connects to the main board LVDS1***

PIN	Description	PIN	Description
1	PVDD	11	RX2-
2	PVDD	12	RX2+
3	RX0-	13	GND
4	RX0+	14	GND
5	NC	15	RX CLK-
6	GND	16	RX CLK+
7	RX1-	17	GND
8	RX1+	18	GND
9	GND	19	RX3-
10	GND	20	RX3+

CON5 ***Inverter and K/B signal connector connects to the main board CN6 and CN10***

PIN No.	Description	PIN No.	Description
1	Vcc	**6**	GND
2	KB-CK	**7**	VIN
3	PC-CK	**8**	VIN
4	KB-DA	**9**	GND
5	PC-DA	**10**	ON/OFF

CON6 ***COM3/USB x2 signal connector connects to the main board CN7***

PIN No.	Description	PIN No.	Description
1	DM-1	**6**	DSR
2	DP-1	**7**	TX
3	DM-0	**8**	RX
4	DP-0	**9**	NC
5	Vcc	**10**	RTS

CON7 ***60Keys Keyboard signal connector***

PIN	Description	PIN	Description
1	GND	11	GND
2	GND	12	RXD2
3	DM-31	13	TXD2
4	DP-31	14	RTS2
5	DM-00	15	CTS2
6	DP-00	16	DTR2
7	PC-CK1	17	DSR2
8	PC-CK	18	NC
9	PC-DA1	19	+12V
10	PC-DA	20	+12V

CN8 ***USB1 Connector***

PIN	Description
1	+5V
2	D-
3	D+
4	GND

P1 ***4Pin Power Connector***

PIN	Description
1	+12V
2	GND
3	GND
4	+5V

A 4-wire cable connects the P1 of 9000PB0810, the supplies DC +12v and DC +5V power for 60keys Keyboard, 1st and 2nd LCD panel

Chapter 5

Troubleshooting

Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.

Power is on, but there is no Panel Display

A) Check that the mainboard Power LED is on when the power adapter power switch is in the on position.
Ensure that the correct AC voltage is selected (the voltage switch is located beside the power switch).

B) Check that the Power are running when system power is on.

B-1) Check whether the ATX power switch cable is properly connected to mainboard CN2 (Please refer to page7 in the FIR-ULV600-DVR User's guide).

C) Please ensure that the IDE cable is properly connected to the HDD and the red stripe on the ribbon cable should align with IDE1 on the IDE connector of HDD.

D) Reset CMOS DATA by shorting mainboard JP1 PIN2 and PIN3 for a few seconds (Please refer to page49 in the FIR-ULV600-DVR User's guide).

E) Check if the system is beeping.

E-1) A single long repeated beep indicates that a DRAM error has occurred. Make sure DRAM is properly installed or replace DRAM.

E-2) One short beep after power on, means system is ok, but LCD panel or VGA interface could be defective.

E-2-1) INIT display should be set for AGP in the COMS setup.

E-2-2) LVDS board connection to mainboard LVDS1 could be defective.

E-2-3) The connection between the LVDS board and the LCD panel is not completely.

E-2-4) The LCD cable could be defective.

E-2-5) The Inverter cannot produce backlight.

E-2-6) The LCD panel could be defective.

To check where the problem could be:

Please connect a VGA monitor to the VGA port. If the VGA monitor is display normally, one of the problems above is occurring, otherwise it could be the mainboard is not functioning properly.

Cannot Detect HDD

A) IDE cable is not connected properly to mainboard IDE1 or it could be defective.

B) HDD power cable is not connected properly to the I/O board or it could be defective.

C) Check CMOS setup, set IDE HDD to Auto detects.

D) On-board IDE port could be defective.

Touch Panel Does not Work

A) Check CMOS settings, COM3 needs to be “Enabled”. The correct settings are “3E8h” and “IRQ10”.

B) Check that there are no conflicts between COM3 IRQ10 and any other devices.

C) Check that the ELO driver or the TouchKit driver has been properly installed. Or try to re-install again (Please refer to the ELO driver installation or the TouchKit driver).

D) Check that the ELO controller or the TouchKit driver on COM3 has been detected during the ELO driver or the TouchKit driver installation. If yes, than check that the flat cable from the ELO touch screen or the TOUCHKIT touch screen has been properly connected to the ELO controller or the TouchKit controller (**Attention:** Pin1 mark should be on the same side as the ELO controller).

E) Check that the ELO controller or the TouchKit controller Green LED is blinking?

If no, there is no DC+5V support for the ELO controller or the TouchKit controller from the mainboard.

E-1) Check that the COM3 cable is properly connected between mainboard CN5 and the Touch screen controller.

F) Touch screen controller could be defective or the touch panel could be defective.

ELO Touch Panel Cannot Calibrate Correctly

A) Please replace the ELO controller, and re-calibrate. If this works, change back to the original ELO controller, and re-calibrate.

B) If the ELO touch panel still cannot calibrate correctly after changing to a new ELO controller, the touch panel may be not installed properly or it could be defective.

PS/2 Keyboard is not Functioning Normally

A) Make sure the keyboard is properly connected to the PS/2 keyboard port before the system is powered up. If the keyboard is connected after Windows2000 has been booted, the keyboard will not work.

B) Check that the LED on the keyboard goes on then off after power on. If yes, the keyboard is getting power correctly.

C) If the MCR is not required. Please make sure the loopback is plugged into the MCR connector board.

D) Check that the 6-wire cable has been properly connected between the MCR connector board and mainboard KB1

The mainboard KB1 cable can be removed. Then short Pins 2-3 and Pins 4-5 If the

keyboard still does not work, then check next step. Otherwise, the cable or MCR connector board could be defective.

E) The mainboard could be defective.

MCR is not Functioning Properly

A) Check if the green MCR LED is on.

A-1) Check if the MCR is properly connected to the MCR connector board on main system.

A-2) Make sure the 6 wire cable is properly connected between 9000PB0610 I/O board CN20 and the MCR connector board.

A-3) The MCR connector board could be defective.

A-4) The MCR module could be defective.

B) If a keyboard is connected to the PS/2 keyboard port, and functions correctly, then the MCR module could be defective.

VFD Display is not Functioning Properly

A) Ensure that COM4 is enabled in the CMOS setup, and data is written to COM4 in the application.

B) Check if there is any display when system power is ON, if the screen is blank, please follow the steps below.

B-1) Make sure the power switch on the VFD display is on before powering the main system.

B-2) Make sure that the mainboard JP4 & JP5 jumper settings are correct.

The proper settings are:

JP4 Pins 1-2 shorted

JP5 Pins 1-2, Pins 3-5 and Pins 4-6 shorted

C) The on-board COM4 I/O chips could be defective.

LAN is not Functioning Properly

A) Check if the LAN driver is installed properly. (Please refer to the LAN driver installation)

B) Check if there are any IRQ conflicts.

C) Check if the RJ45 cable is properly connected.

D) The on board LAN chip could be defective.

COM1, COM2, COM5, COM6 are not Functioning Properly

A) Check if the I/O ports are enabled in the CMOS setup.

B) Check if there are any IRQ conflicts.

C) The mainboard could be defective.

Cash Drawer Port is not Functioning Properly

A) Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.

B) Verify the digit I/O port address and bit are “280h” respectively. Command send “L” level for 200ms (Refer to FIR-ULV600-DVR user’s manual page).

C) The mainboard could be defective.

USB device is not Functioning Properly

A) Ensure that the USB controller is “enabled” in the CMOS setup.

B) Ensure that the USB Legacy is “enabled” in the CMOS setup. (Windows 98、Windows 2000、Window XP Professional)

C) Ensure that the USB Legacy is “Disabled” in the CMOS setup. (Embedded OS: Windows XP Embedded、Window CE. NET、Linux RedHat 9)